

University of Canterbury

Operation Houndstooth

Gifted learners develop social and moral
reasoning skills within a social capital
framework.

A thesis submitted in partial fulfilment of the requirements for the
Degree of Master of Teaching and Learning at the University of
Canterbury

By Elizabeth Coster

September 2013

Acknowledgements

A sincere and heartfelt thank you to Dr. Ronnie Davey and Jenny Smith, who have travelled this long journey with me. You have inspired me throughout this entire process and the completion of this research would not have been possible without you both.

Thank you to all of the students, teachers and parents involved in this research.

Thank you also to the supportive colleagues across several schools that have encouraged me to continue on with this work even in the middle of a natural disaster.

Thank you to Robyn Robinson whose contribution and time made all the difference to the completion of this piece of work.

This research is dedicated to Mike, Beanie and Sam for putting up with many long nights spent at the kitchen table. None of this would have been possible without your enduring support and patience throughout all of this.

Table of Contents

Acknowledgements ii

Abstract vii

Definitions of Terminology viii

Chapter One: Introduction	1
Significance of the study	1
Topic and aims of the study	4
Development of project	5
Research question	5
Identification of participants	6
Role of researcher	6
Thesis overview	8
Chapter Two: Review of Literature	9
Emotional Intelligence	9
Over-excitabilities	12
Co-cognitive skills	14
IQ Impact	15
Social Capital	17
Differentiated Model of Giftedness	19
Positive Psychology	21
Cooperative Learning	23
iii	

Habits of Mind	24
Environmental Education	26
Enrichment Triad Model	27
Operation Houndstooth	29
Inquiry Learning	33
Summary	34
 Chapter Three: Research Methodology	 36
Research Methodology	36
Overview of Qualitative Research	37
Data collection	39
The participants	41
Methods of data collection	42
Trustworthiness of data	46
Analysis of data	48
Summary	50
 Chapter Four: Findings	 51
Identified themes	52
Social communication	52
Problem solving	56
Operation Houndstooth	60

Global issues	64
Confidence	65
Leadership	67
Limitations	67
Summary	68
 Chapter Five: Discussion	 71
Outcomes for gifted learners	72
Co-cognitive skills	80
‘Operation Houndstooth’ and environmental education	85
Summary	88
 Chapter Six: Conclusion	 90
Implications of the study	90
Significance of the study	94
Recommendations	94
My learning journey	96
Suggestions for future research	97

Appendices

Appendix A	99
Appendix B	100
Appendix C	101
Appendix D	102

References	103
-------------------	------------

List of Figures

Figure 1 Gagne Differentiated Model of Giftedness	20
Figure 2 Costa & Kallick Habits of Mind	25
Figure 3 Renzulli Enrichment Triad Model	28
Figure 4 Renzulli Three-Ring Conception of Giftedness	30
Figure 5 Renzulli, Sytsma & Berman Operation Houndstooth Model	31

Abstract

Acceptance of emotional intelligence as a form of giftedness has been a very gradual process particularly when placed alongside more widely recognised forms of academic giftedness. This piece of research examines the incorporation of the gifted learning model Operation Houndstooth within the setting of a primary school environmental programme in order to meet the learning needs of a group emotionally gifted students. The project was initiated after observing the capacity of the New Zealand Enviro Schools programme as a learning vehicle to allow this group of gifted learners the opportunity to participate in a problem solving process within the Operation Houndstooth model. Houndstooth itself derives from the Enrichment Triad Model for learning and is the work of the American educational psychologist Joseph Renzulli. The Houndstooth model has been designed to extend the co-cognitive skills of each gifted learner.

The programme itself was conducted within a primary school environment in which the researcher was employed as a teacher and the participants were members of the senior classes. The research was carried out as a qualitative study with a single-case study placed alongside action research. The completion of the project saw the emergence of a group of students who had developed their confidence as efficient communicators and capable problem solvers. The study argues for the development of gifted programmes that recognise emotional giftedness within the New Zealand primary school setting which incorporates Renzulli's Houndstooth as a delivery model.

Definition of Terms

The terms used in this research will be placed under the terms used by gifted education or terminology used by environmental education.

Gifted Education

Cognitive development – The development of an individual's mental processes of thought referring to the areas of visual processing, problem solving, memory and language development.

Co-cognitive factors –These components as identified on Joseph Renzulli's Operation Houndstooth are factors that "interact and enhance" an individual's cognitive processing skills. These components are: optimism, courage, romance, sensitivity, physical energy, vision.

Co-operative learning – A method of instruction in which students work together in either mixed ability or same ability groups to achieve a specified goal. This definition refers to the model developed by David and Roger Johnson, labelled the Johnson and Johnson model. Engagement in co-operative learning involves the following components: 'positive interdependence, individual accountability, face-to-face promotive interaction, appropriate use of collaborative skills and group processing'.

Emotional intelligence – An individual’s ability to perceive emotion and use it to process information, to make sense of the surrounding social environment, to manage conflict and to effect change or decision making.

Enrichment Triad Model – A model of learning designed by Joseph Renzulli in the 1970s to develop “creative productivity” for gifted learners with exposure to a variety of subjects and areas of interest. Once students have been ‘exposed’ to various topics and ‘developed’ their thinking they follow areas of training in “self-selected” fields of interest.

Habits of Mind – Tools or actions that can be utilised when dealing with a problem that requires investigating. These learning tools were developed by Art Costa and expanded with Bena Kallick. Schools employ the framework to assist with goal setting and problem solving.

Inquiry learning – This style of learning is directed by the student’s questions in relation to the topic being studied and seeks to consider the ‘knowledge’ and ‘capabilities’ of each student. The key question that focuses the gathering of information is, ‘Why is it important?’ Teachers have a specific role in considering, ‘What strategies will assist students to learn?’ Students work on solving problems they have identified rather than teacher direction about solving a question or problem. Teachers do not provide knowledge but encourage the students to discover knowledge.

IQ testing – A psychometric form of assessment that measures an individual's intelligence and potential for academic achievement based upon their reasoning, comprehension, processing and memory skills. An intelligence quotient is awarded based upon the results achieved from the IQ test. More commonly recognised tests are the Stanford-Binet Intelligence Scale and the Wechsler Intelligence Scale for children. A score of between 130 to 144 can be an indicator of a moderate level of giftedness. The range of 116 through to 180 progresses through different indicator levels of mild to superior giftedness while a score ranging between 85 to 115 represents the medium/average cluster of intelligence. The information collated from a range of IQ tests is able to be placed upon a bell curve representing the spread of quotients with 100 indicating the centre of the curve.

Schoolwide Enrichment Model – A gifted model of learning constructed by Joseph Renzulli and Sally Reis. The Schoolwide Enrichment model is an adaptation of Renzulli's previous Enrichment Triad Model and encompasses Renzulli's 'Three-Ring conception of giftedness'. Gifted students are identified through a series of assessments. The students are involved in developing learning styles, extension of regular curriculum activities and engaged in appropriate enrichment experiences.

Social capital – Identified as a network of social relationships, trust and social norms that exist within a society or community. Although the concept had been recognised from the 1900s it came into prominence in the 1990s, through the work of political

x

scientists and sociologists such as Putnam, Bourdieu, Coleman and other contributors.

Social capital contrasts with the ideals of financial capital in that it focuses on the importance of people and their social connections and relationships as opposed to the value of economic gain. The care that a society demonstrates towards its individuals reflects the value it places on the people who live there.

Moral reasoning – A study in psychology and moral philosophy predominantly developed by the psychologist Lawrence Kohlberg, connected to the moral development theories of Jean Piaget. Moral reasoning follows the changes to an individual's moral development. Kohlberg promoted the concept that children move through three different levels while developing moral reasoning skills. The first 'Pre-conventional' is linked to the individual's accountability for their own actions. The following level 'Conventional' is centred on an individual developing their place in society and the level 'Post-conventional' is connected to the relationship of society's rules and principles. There are a series of stages within each level that individuals move through, leading to a sense of responsibility for others around them.

Operation Houndstooth – A model for gifted learning developed by Joseph Renzulli with links to positive psychology and the concept of social capital. Operation Houndstooth is a framework that is linked to the Enrichment Triad Model. The model consists of six components: 'Optimism', 'Courage', 'Romance with a topic or discipline', 'Sensitivity to human concerns', 'Physical/mental energy' and 'Vision/sense

of destiny'. The model encourages positive learning opportunities for students, utilising their abilities, interest and engagement in the world that surrounds them. Social and emotional giftedness is extended through engagement in tasks that stimulate social problem solving and the development of co-cognitive factors.

Over-excitability – A 'sensitivity' related to the intense sense of emotion that some gifted individuals may experience in response to people, places and situations causing them stress or conflict. Kazimierz Dabrowski, a Polish psychologist and psychologist advocated the theory that individuals respond to stress and tension by effecting change that produces movement from 'what is' to 'what ought to be'. Some gifted students may express anxiety over the need to change or problem solve an area of concern and when they are unable to execute that movement their intense response to the stress is known as over-excitability. There are five identified over-excitabilities: 'Psychomotor', 'Sensual', Intellectual', 'Imaginational' and 'Emotional'.

Positive psychology – An area of psychology from the study of social and behavioural sciences. Positive psychology examines the "strengths and virtues" of an individual or community. Martin Seligman and Mihaly Csikszentmihalyi in 1998 promoted the modern positive psychology movement. Themes found within this movement seek the 'improvement of the quality of normal life'. The study is focused on the positive functioning of the lives of individuals and communities by inducing positivity across 'emotions' and 'institutions'.

Three-Ring Conception of Giftedness – Introduced by Joseph Renzulli in 1978 as an approach to identifying gifted students by unique characteristics. The three rings represent three ‘traits’: ‘Above average ability’, ‘Creativity’ and ‘Task Commitment’. The engagement of all three of the rings together produce the occurrence of giftedness that can be observed and identified in students.

Environmental Education

Enviro Education

Enviro Schools – Schools involved in offering a programme of learning established by the Enviro Schools foundation, supported by a not-for-profit trust that assists students in their learning about the environment. The aim of the foundation is to develop sustainable environmental programmes within schools. Individual schools in New Zealand are supported and encouraged to develop a school-wide plan that allows for sustainability for the environment into the future. Locally schools are supported by local businesses and regional councils. An enviro facilitator provides support with planning, programing and whole school enviro development.

Enviro – Shortened form of Environment; term used by Enviro schools programme

The above definitions are sourced from Ansell-Shepherd & Shepherd (2001), Bainbridge (2013), Costa & Kallick (2000), Enviroschools (2009), Felder & Brent

(2007), Gauntlett (2011), Lind (2001), Kuhlthau, Maniotes, & Caspari (2007), New Zealand Ministry of Education (2010), Renzulli (2002) & (2003), Seligman & Csikszentmihalyi (2000).

Introduction

Historically, the group of learners labelled as gifted have often had to struggle by themselves in their learning due to lack of recognition for their particular learning needs. However, once giftedness was recognised in education, students have tended to be identified by means of an academic baseline or IQ test (Renzulli, 1978). In our current educational setting, educators have come to recognise that giftedness encompasses far more than high levels of achievement in their academic studies and can be displayed across a broad spectrum of strengths. Other areas of giftedness now include: “Music, art, drama, leadership, public speaking, social service, creative writing, or skills in interpersonal relations” (Reis & Renzulli, 2003, p.185).

When New Zealand educators create environments that support emotionally gifted students, I would argue that they are taking a step in shaping gifted leaders who have a significant role to play in the social development of New Zealand.

Significance of the study

This study is concerned with developing within a New Zealand educational setting, a framework that assists schools to develop social capital when our local communities are unable to do so (LaBonte, 1999). As stated, the focus is solely on the group of learners who display strengths in emotional intelligence, which if nurtured, as suggested by the gifted and talented researcher Joseph Renzulli, will have an impact upon the development of social capital in our communities (Renzulli, 2002).

With the publication of a revised New Zealand National Curriculum in 2007, schools around the country engaged in constructing ‘unique’ programmes of work based upon the directive of the latest New Zealand Curriculum and the influence of the communities they were connected to (Ministry of Education, 2012). While involved in developing their own curriculum programmes, educators had the opportunity to consider the numerous groups of learners who make up their local school community and in this community emotionally gifted learners are found (ERO, 2010). The revised 2007 Curriculum presented schools with a shift in focus, including, in particular, an emphasis on the Essential Thinking Skills which emerged as The Key Competencies. This is a group of learning tools that will assist learners as they take their place in a global employment setting. The Key Competencies of: *Thinking, Using Language, Symbols, & Texts, Managing Self, Relating to Others and Participating & Contributing* included a direct challenge to educators to provide programmes that are student centred and relevant for their future (New Zealand Curriculum, 2007).

Alongside the Key Competencies in the Curriculum is the following set of Values: *Excellence, Innovation, Diversity, Equity, Community & Participation, Ecological Sustainability and Integrity* (New Zealand Curriculum, 2007). The values, if implemented successfully against the Key Competencies, bring about the possibility of potential programmes that specifically meet the learning needs of emotionally gifted learners. For these learners participation in a programme that is focused on the value of ‘Community and Participation’ highlights the possibility of establishing links outside the classroom with other gifted learners and the local community. This could also

include dimensions of leadership within school community projects. 'Ecological Sustainability' as a value is woven throughout environmental programmes, allowing people to make a vital connection to the need to address issues of global concern by taking small steps in our own community. With the identified challenge of developing the social leaders of tomorrow in communities suffering from poverty, unemployment and a lack of community trust and engagement (University of Minnesota, 2008). I became interested in whether New Zealand schools could find a relevant framework within which to develop these essential programmes.

Research into gifted development, like that conducted by Clark (2002), supports the evidence that any gifted student, whose learning needs are not being sufficiently met, will lose interest in their educational environment (Ministry of Education, 2012). This is even more the case for emotionally gifted students who cannot take their skills to the next level of thinking and productivity without exposure to learning frameworks that will assist them in the development of specific problem solving skills (Parke, 1992). For gifted students who are suffering from boredom and lack of motivation in the classroom, participation in 'civic' and 'socially engaging' activities can hold the key to overcoming disengagement and disaffection producing gifted learners who demonstrate initiative, creativity and leadership, altruism, and civic engagement (Larsen, 2000).

Topic and aims of the study

The purpose of this study is to investigate in what ways a primary school gifted environmental programme that utilises Joseph Renzulli's Operation Houndstooth, develops leadership and social awareness for a group of gifted learners. The world we live and work in bombards our young learners with news of poverty, social injustice and the environmental damage that takes place with an almost daily occurrence. Emotionally gifted learners develop an awareness of these messages from a young age and can become concerned with how they can participate in making a difference to the people and issues they recognise around them (Piechowski, 2003). These students often develop an empathy with particular social causes and need to find avenues within our schooling system that allow them to develop the necessary skills to 'make a difference' for others and in the world around them.

Joseph Renzulli highlighted the problem of education systems providing programmes that encourage these students with their specific thinking skills to become potential leaders who are aware of the value of people and place as well as financial reward. "Can our education system produce future corporate leaders who are as sensitive to aesthetics and environmental concerns as they are to the corporate bottom line?" (Renzulli, 2002, p.2).

The challenge presented is that of providing stimulating educational programmes that instil an awareness of community and provide an outlet for these gifted students to utilise and participate in real community problem solving initiatives.

In order to develop those necessary skills and awareness in our gifted learners, I would argue that educators need to construct programmes that include the concepts of moral development and thinking. It is through their social interactions and direct experiences that gifted learners extend their moral development (Nucci, 2009).

Development of Project

As an educator I had spent time working with the Enviro Schools Project. One strength of the project is that it immerses students in a programme that assists them in making connections to both national and global issues. I wondered if this programme would have the capability of meeting the needs of gifted learners. From this point I developed an interest in the perceptions of those gifted learners who displayed the characteristics of emotional intelligence. I was also drawn to the difficulty some of these learners experienced in accessing and consolidating their ability as problem solvers and the contributions they had the potential to make as leaders. Finally I required a gifted framework that the project could be developed within.

Research Question

With an emerging interest in emotional giftedness, I became very excited by the work of Joseph Renzulli in the area of gifted education. The development of the Houndstooth model I believed could provide a learning model that would allow each participant of the study to recognise their own personal journey through the project while encouraging the extension of their emotional perceptions and problem solving abilities. Through engagement with a school based community environmental programme each student

would have the opportunity to engage with the co-cognitive components of Renzulli's gifted learning model.

Main question

In what ways can the co-cognitive learning needs of a group of gifted learners be met through the incorporation of Renzulli's Houndstooth Project within an environmental primary school programme?

Identification of participants

Discussions were held with the principal, assistant principal and classroom teachers to initially identify and determine eligible students for the project. Each selected student had, in the course of their time at the school, demonstrated a natural inclination towards environmental issues at school, within their local community or on a global scale. Although this had not in any way predetermined who would be selected, some of the students wanted to ensure that there was the development of sustainable garden systems within the school for future students to use and learn about. Two of the students expressed their concern about the polluting of the local river. One of the students was particularly disturbed by the melting of the polar ice caps and the dilemma this issue created for countries that are situated close to the North and South Poles.

Role of Researcher

Throughout the course of the research I found myself in several competing roles: as researcher, classroom facilitator and as a teacher employed by the school where the project took place. This raised several complex challenges for me. It meant that I had to

maintain specific guidelines to keep me independent and impartial in my evaluation throughout the study.

Despite not having taught the students, due to the smaller size of the school I was already familiar with each participant. This required a careful examination of the way in which I went about presenting the programme. The programme needed to be run in an entirely different manner to the previous environmental work that had been undertaken as part of the school's enviro project, in order to avoid the students assuming that it was tied to their previous work. Each session was carefully outlined for students, with the learning outcomes that needed to be achieved and for me, the observations and discussions that needed to take place. As a teacher I had to 'resist' the urge to step in and offer too much advice when the students were addressing or discussing an issue. I had to continually refer myself back to the research question to ensure that I remained in the role of researcher rather than teacher facilitating a programme of learning.

This also assisted with the type of interactions that were observed as part of the research. In the beginning I wanted to record every segment of the project but I was guided by the research which determined the essential aspects that required greater detailing from the information that was gathered. I also had to negotiate with considerable care, potential role conflicts. For example I was reoriented back into my role as a teacher when parents and classroom teachers, who were naturally interested in the progress of their child and students, wanted to discuss their progress. However, I had

to be very careful that the discussions that took place were based solely on the students' progress without compromising any confidential aspects of the research.

Thesis Overview

Chapter 1: The first chapter highlights the need for the provision of relevant gifted programmes that meet the complex learning needs of gifted learners. The focus of this research is the development of programmes that cater for emotional giftedness. My research question challenged the placement of emotionally gifted students within environmental programmes that are constructed around a gifted framework.

Chapter 2: The second chapter reviews the literature pertaining to emotional intelligence, learning and teaching processes and the gifted learning models of Joseph Renzulli.

Chapter 3: This chapter explains the methodology that was selected, sources of data, selection of the individual participants and the analysis of the project's data.

Chapter 4: This chapter provides evidence of the identified themes that emerged from the data as the project progressed and the limitations of conducting the project.

Chapter 5: The fifth chapter presents a discussion connected to the themes identified from the previous chapter focusing on the argument for schools to address the needs of emotionally gifted learners.

Chapter 6: The final chapter, the conclusion, discusses the implications and significance of the research particularly on the utilisation of the Houndstooth model and environmental education.

Chapter Two: Review of Literature

This chapter is a review of the literature associated with emotional intelligence. It is divided into three parts. In Part one I shall review the literature encompassing the research related to the recognition and definitions of emotional intelligence. I also present the range of ideas and strategies connected to the implementation of programmes that support students displaying emotional intelligence within educational institutions and communities. In the next section I examine the models of learning that support the development of emotional intelligence in an educational setting and the development of specific skills for gifted learners. In this final section I introduce a particular learning framework which focuses on the development of co-cognitive skills. It is this model of learning that I have employed in the design of my research study into emotional intelligence and gifted education.

Part One:

Recognition and definitions of emotional intelligence and ideas and strategies connected to the implementation of gifted education.

Emotional Intelligence

Emotional intelligence, the awareness and control over our emotions and the ability to recognise emotion in other people, is an educational theory that has slowly gained recognition as an area of giftedness in children. Howard Gardner influenced this recognition with his multiple intelligence model. Gardner, a psychologist and professor of neuroscience, introduced his model in 1983 (Klein, 1997). The model promoted a

shift away from intelligence as a 'single entity', challenging previous thought of one type of 'general' intelligence. He identified seven intelligences, with the focus of this study recognising the ways in which 'interpersonal' and 'intrapersonal' intelligences are linked to emotional intelligence (Goleman, 2001). 'Interpersonal' intelligence observes individuals displaying the ability to understand people and their 'motivations' while 'intrapersonal' is the development of being able to comprehend yourself (Smith, 2002, 2008). The intelligences identified by Gardner do not operate in isolation but rather interact together. As with the introduction of emotional intelligence, the concept of multiple intelligences has to struggle against the more established concept of academic intelligence.

Initially gifted education explored children's cognitive needs, centring on memory and academic ability. Academic tests were administered to determine gifted learning levels. Unfortunately for those students who were emotionally gifted, the recognition and testing was not focused on the emotional side of their learning (Versteynen, 2012). In the history of gifted education this narrow focus was to the detriment of some learners. This has been evidenced by the way in which gifted learners, who demonstrated greater sensitivity to emotional intelligence, felt isolated in their schooling (Wedge, 2012).

Research conducted in the 1990s by John Mayer and Peter Salovey highlighted emotional intelligence as a 'subset of social intelligence'. This provides a connection with Gardner's 'interpersonal' and 'intrapersonal' intelligences in that it combines both an understanding of the emotions of other people and an individual's own emotions

(Salovey & Mayer, 1990). The authors identified and developed four areas of emotional intelligence. These areas are presented as steps that follow each other in the development of emotional intelligence. The first of these steps is, 'perceived emotions', where an individual recognises the emotion from a person's body language including nonverbal signs. The second step, 'reasoning with emotions', centres on people's response to information that is presented to them. This also involves the engagement of thinking and cognitive involvement. The third, 'understanding emotions', is the ability to comprehend the expressed emotions of other people and the fourth and final step in the progression is, 'managing emotions', highlighted by an individual's ability to respond in an appropriate manner to the emotions around them including their own (Cherry, 2012).

Both Clark (1992) and Silverman (1994) have also argued for the recognition of the following characteristics as indicators of emotional intelligence; advanced moral judgement, heightened self-awareness, sensitivity to the expectations and feelings of others, perfectionism, introversion, high expectations of self and others, idealism and a sense of justice, and higher levels of emotional depth and intensity. Each of these characteristics is able to be observed in the behaviour of students who have been identified as emotionally gifted.

Another recent study on emotional intelligence conducted by Elias (2006), identified the need for all students to be given the opportunity to develop the skills to expand their ability to deal with social and emotional learning. In particular, he argued for

participation in community schemes as a method of harnessing young children's ability to make a connection with others while further developing these identified characteristics.

Panju (2008), adds weight to the argument for the acceptance of the role of emotional intelligence. He highlights the significance of this intelligence in decision making both in general society and also for the world of business. The business community itself has begun to acknowledge the role of emotional intelligence in developing leadership. Individuals identified as displaying the characteristics of emotional intelligence have been recognised as having the potential to become future leaders in an organisation. Their ability to lead with insightfulness into people's emotions gives them a greater perception about others in the workforce (Tocker, 2012).

Although the characteristics of emotional intelligence assist in leadership development for adults, in his research Silverman (1994), recognises that these characteristics can also lead to what has been identified as over-excitabilities for children. The characteristics of 'sensitivity', 'perfectionism', 'intensity' and 'introversion' when combined can present themselves as a very intensified range of emotions for young learners.

Over-excitabilities

As emotionally gifted students work in their classroom or move about their local community they can become overwhelmed by their concerns pertaining to the local and

global issues that they see before them. If left to worry about these issues, emotionally gifted learners can move into a state of what is known as ‘over-excitability’. Teachers and parents can often struggle to realise that these students are experiencing the same level of concern as that of an adult (Bainbridge, 2009). If the over-excitability does not dissipate and if students are not given the opportunity to discuss or solve their concerns, over excitability can lead to development of existential depression. This type of depression, argues Bainbridge, is related to how the students view the concerns that surround them such as ‘death’, global issues and ‘war’. Existential depression is associated with the work of Kazimierz Dabrowski, a psychologist and psychiatrist who conducted intensive research into intellectual giftedness.

Over-excitability may also impact on the confidence of gifted students if they are not given strategies to cope with the range of emotions they feel and the issues that they may associate with (Lyons, 2009). This suggests that educators need to be sensitive to students demonstrating an over-excitability as part of a student’s learning style as there may be a need to move around and concern for others can come across as disrespectful.

Dabrowski, (Lind, 2001) who led research in over-excitabilities, listed five areas which he labelled ‘over excitabilities’ or ‘super sensitivities’ that students who are gifted may exhibit. The areas include: psychomotor, sensual, emotional, intellectual and imaginational. The two that appear most often exhibited by children with emotional intelligence are ‘intellectual’, pertaining to a deeper level of processing questions and ‘emotional’. Bainbridge (2012) suggests that the latter can see children mislabelled with

a disorder connected to emotional instability, because of the worry and concern they have about their environment and global predicaments.

Dabrowski's research conducted in the 1970's found that there are a higher number of people in the gifted population who are identified with over excitability, than there is in general population. This is manifest in the increased sensitivity and awareness of people and what is happening around them. Lind (2001) suggests that emotionally gifted students may display 'emotional over excitability' which would see them identify with complex or emotional situations occurring around them. Piechowski (1991) also recognised the manifestation of these heightened and often intense feelings which are characteristics displayed by those individuals with over excitability. Unfortunately this group of gifted students can be seen as 'over reacting' especially when their concern and compassion impacts on their ability to complete routine tasks (Lind, 2001). What educators and parents can respond to as an overreaction to trivial matters or off task behaviour, can in fact be the result of a child experiencing a range of heightened emotions that they are unable to cope or deal with.

Co-cognitive Skills

Another concept that suggests that the establishment of gifted programmes be centred on emotional intelligences comes from the work of Feldman, Csikszentmihalyi & Gardner (1994) around co-cognitive factors and their role in child development. This group of researchers highlight the importance of identifying students with strengths in social problem solving from an early age and facilitating a change in their thinking

skills. Their research urges schools to develop a framework that encourages and develops the creative skills of those students who demonstrate the thinking skills for implementing social change.

To date, the only limited educational research undertaken in the field of co-cognitive factors as an academic framework is the work of Joseph Renzulli. Renzulli's intervention framework, the Houndstooth Project (Renzulli, Koehler & Fogarty, 2006) incorporates his concept of nurturing and developing co-cognitive skills in students. There are currently no published studies that have been undertaken in New Zealand into the Houndstooth Project. The Project is directly tied to Renzulli's previous models for the education of gifted students in schools. Through his work Renzulli (2006) identified the need to address the needs of gifted students, who by way of their own strengths in emotion and empathy, have the potential to become social leaders. These are students who understand community issues on a global scale and the need for the development of social capital.

IQ Impact

Traditionally, it has been various forms of IQ testing and related measures which have been utilised as the main indicators of an individual's giftedness. These have provided educators with the data required to organise students into programmes that will enhance and encourage their identified academic strengths. These IQ assessments in themselves can sometimes impact upon these learners by having a so called 'ceiling effect', (Silverman, 2012). When this occurs, a child's highest result can be ignored and a

slightly lower indicator selected with assessors and educators preferring an indicator that is closer to a mid-range result. Traditional IQ assessments do not measure the emotional intelligence of gifted students who are not observed in a classroom environment as an assessment of their practical problem solving skills.

While early detection and assessment of any giftedness is important for any gifted child, it is even more so for someone who is displaying the characteristics of advanced emotional intelligence, perfectionism, sensitivity and intensity. Silverman (2012) argues that developmentally, different things will be happening at different stages for these learners and they will require a supportive environment that is sensitive to enhancing this development. A child who displays these emotional characteristics may begin to demonstrate their perception of the world around them earlier on in their development than other children at a similar age. An IQ test that does not measure emotional intelligence can have a negative impact on the learning environment that is constructed for these students. Without appropriate support that recognises this unique emotional learning style these learners can, as identified within the over-excitabilities, begin to experience social isolation within their peer group. Therefore it can be argued that the type of environment within which gifted students operate must be sensitive to their specific needs.

A lack of recognition and the provision of learning support for emotionally gifted students can have further flow-on effects. McGuffog, Feiring & Lewis (1987) highlight that if those students with advanced emotional intelligence are not supported in their

learning environment, they will quickly begin to feel helpless about the issues that concern them. Such learners experience an internal struggle to access information and develop the problem solving skills that would enable them to make relevant connections to the problems and other people. Lyons (2009) when examining gifted students reflected upon 'loneliness' and 'intense feelings' that gifted students could feel in their learning environment. Gifted students may also notice their giftedness as a difference and wish to conceal what they are capable of achieving.

Social Capital

Trends currently identified in Western societies indicate that people are becoming increasingly isolated in their interactions within social groups and communities. People may no longer interact with their neighbours and fail to connect and feel empathy for social issues within their own community (Turiel, 2002). Renzulli (2002) points to the high value that is placed upon 'financial' and 'intellectual' capital. 'Social' capital, he identifies, consists of 'intangible assets' that assist with problem solving and community issues. When global communities focus solely on their pursuit of financial and intellectual capital, social capital begins to break down. Social capital can also be identified as the capital that is attained when global societies place importance on people within their communities. A society that chooses to invest in social capital, argues Renzulli (2002) will cultivate a social system of 'networks' and 'social trust' that establish healthy communities for the individuals that live within them. It is this break down in social capital that is of concern for educators. To function successfully as a

society, aspects of social awareness need to be developed and indeed LaBonte's (1999) work indicates that society's well-being depends on it.

Other studies that affirm the benefits for communities that advocate for the development of social capital include Putnam (1993, 1995) whose research points out that the 'prosperity' of a community depends on an individual's ability to feel connected when participating in various groups. He highlights the impact this has upon the collective whole. If a community fosters social capital, asserts Portes (1998), then the follow on effect will be 'economic development' and 'good government' factors important to financial capital. In their work on social capital in Scottish schools, Cotts and Ozga (2005) identified that social capital creates, between participants, a sense of shared identity and capabilities that should be developed within an educational setting.

Alongside the research that advocates the importance of harnessing social capital in communities is Lawrence Kohlberg's research around Piaget's cognitive and moral development. Kohlberg constructed six stages of moral reasoning that begin with an awareness of society's role in promoting organised order and leads to a concept of people developing an awareness of a universal ethical principle (Galbraith & Jones, 1976). In other words, the moral environment that surrounds a learner will determine their successful progression through each stage of their maturity and their individual functioning in society. How educational institutions promote the participation of students in developing a 'sense of community' and an awareness of their contributions

on others, appears to have an impact on the development of social capital that, if recognised and initiated, benefits both the individual and their community.

Society, Renzulli (2012) argues, carries the responsibility for constructing gifted educational programmes that produce individuals who, in the future, will move into roles that have the responsibility for solving communal and global issues with their unique knowledge and expertise. If educational institutions are able to perceive the importance of recognising emotional intelligence within gifted programmes, this in turn will result in the nurturing of future leaders and problem solvers, promoting the ideas of social capital.

Part Two:

Models of learning supporting the development of emotional intelligence and skills for gifted learners.

Differentiated Model of Giftedness

Robert Gagne, an educational psychologist, recognised that individuals require individualised learning programmes, due to the diverse nature of how people learn. Based upon the ‘capabilities’ that children displayed in their consolidation of learning, (Gagne, 1985) constructed a learning model titled ‘Conditions of Learning’ where each step recognised the conditions that need to be engaged to allow new learning to take place.

Robert Gagne, an educational psychologist, recognised that individuals require individualised learning programmes, owing to the diverse nature of how people learn. He established a model of learning based on the learning outcomes or performance that learners display: the ‘Differentiated Model of Giftedness and Talent’. The model recognises the importance of catering to learners with learning programmes that meet individual learning needs by the recognition of individual outcomes. Within this model are five categories of learning outcomes: ‘intellectual skills’, ‘verbal information’, ‘cognitive strategies’, ‘attitudes’, and ‘motor skills’ (Gagne, 1984), as shown in Figure 1 below.

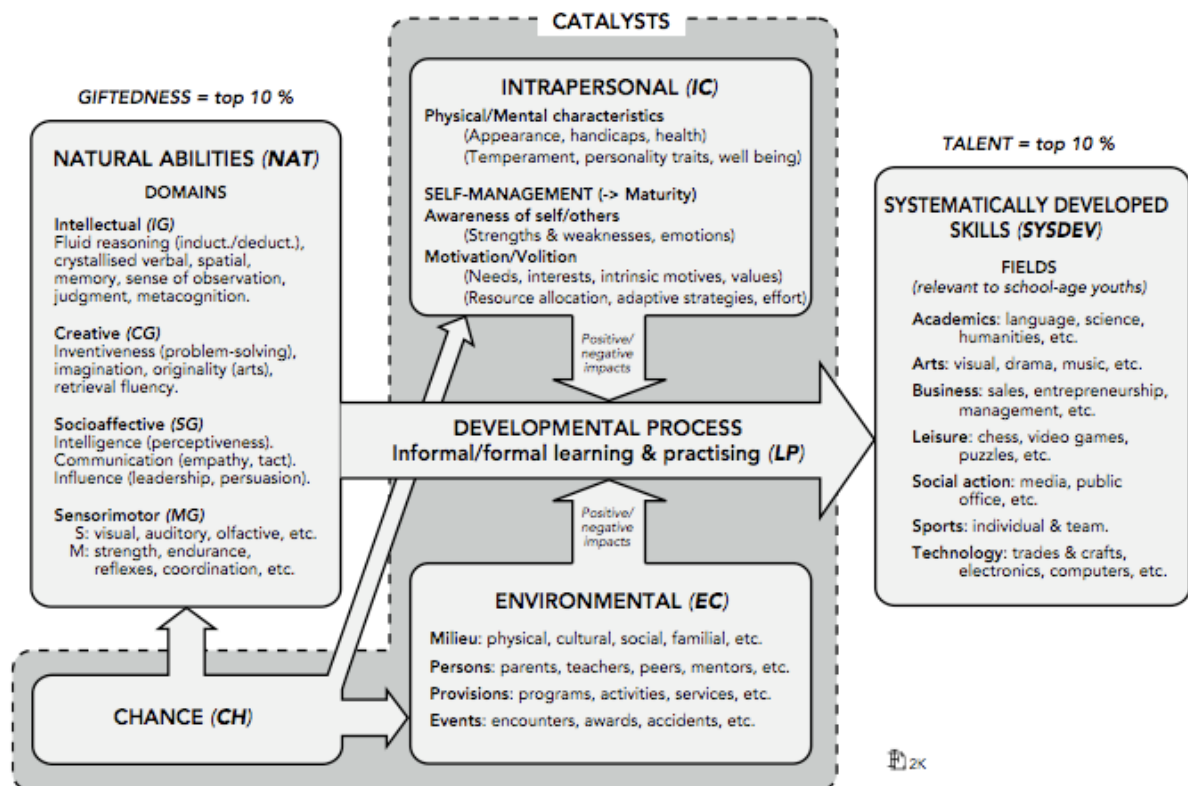


Figure 1 Differentiated Model of Giftedness

Within the learning environment there can exist ‘catalysts’ that impact upon the learning of gifted learners. Some of these identified catalysts can be ‘intrapersonal’ and ‘environmental’ (Gagne, 2000). Gagne argues that the impact of environmental catalysts may impact on the development of those students who display emotional intelligence when educators do not allow for the extension of their skills.

This particular learning model places the emphasis on providing educational environments that meet the specific needs of the learners operating within it. Each learning outcome needs to be broken down to recognise the differences in how people learn and their effect on the environments or individuals they are interacting with. When placed within this model, emotional intelligence is identified as those natural abilities that enable students to work with others in developing solutions to issues that impact on people and places. These are the same skills that social capital seeks to produce in future problem solvers and leaders. The environment that surrounds the gifted learner is paramount to extending and meeting their specific learning needs.

Learning and Teaching Processes

Positive Psychology

Positive psychology has emerged as an area that focuses on encouraging positive outcomes for individuals by foregrounding the positivity of their emotions and abilities rather than focus on the negative outcomes and feelings of ineffectiveness to influence change (Masten & Yates, 2004).

Fredrickson (2011) detailed the need for educators to develop and provide programmes for emotional gifted learners that allow for the growth of positive emotions which, when placed alongside strategies for problem solving, assist the students in coping with the various issues that they connect with. Seligman (2006) argues that, given the numbers of young people who suffer from depression, 'positive emotion' is a concept that should not only be taught to gifted students but to all students. This argument connects with the concept of over excitabilities where students may go on to suffer depression if they are not given the strategies to cope with the emotions that they feel about the world around them.

Renzulli (2002) in turn presents positive psychology as a 'science of human strengths' in which schools are able to contribute to making a positive impact upon how young people connect to society and people around them. Engagement in activities that assist students to develop and strengthen their connection to a wider community base Larsen (2000) argues, can assist in movement away from 'disengagement' and feelings of disillusionment. One spin off from this active engagement not only is the positive emotions that it generates but also, as recognised under social capital the nurturing of socially conscious leaders for the future.

The work of Martin Seligman also examines the role that optimism plays in meeting the needs of emotionally gifted learners. As studies already discussed in this chapter show when a group of learners who are sensitive to the issues that surround them are not supported in their learning environment, they may become overwhelmed by feelings of

anxiety, pessimism and even depression by their inability to execute positive change (Seligman, 1991). The purpose of positive psychology, “is to create a science of human strengths that will help us to understand and learn how to foster socially constructive virtues in young people” (Renzulli, 2003. p. 78). In other words, its goal is to assist people in becoming decision makers and instigators of change. Students learn to develop the skills to enhance situations rather than be made to feel helpless by them (Renzulli, 2003).

Positive psychology not only seeks to create learning environments that will execute change for these students but also provides an opportunity for schools to develop their leadership programmes. There is a need for investigation within New Zealand gifted programmes into addressing the incorporation of positive psychology and the role it plays in the development of emotional intelligence.

Cooperative Learning

Consolidating the ability of emotionally gifted learners to work with various people requires the investigation of the concept of cooperative learning. Within this environment each individual learns to come together with other people and work as one unit to solve problems. Programmes that establish cooperative learning, as discussed by Slavin (1996), are more likely to be successful if the end result can only be achieved through cooperation and collaboration between all group members. Van Tassel-Baska, Landrum & Petersen (1992) rationalise the need for the provision of learning models that encourage this positive peer interaction in the area of complex problem solving and

engagement in local community. Providing gifted students with opportunities to engage in cooperative learning with other students who possess similar processing skills will provide schools with instructional programmes that fully engage and motivate these learners. Establishing cooperative learning programmes that link groups of gifted learners with common or similar processing skills together produces outcomes that develop positivity and extended knowledge. For students who display emotional intelligence the outcomes of sharing ideas and connections, developing effective problem solving skills and assuming responsibility for addressing communal issues is invaluable within a school environment (Matthews, 1992).

Habits of Mind

Habits of Mind created by Arthur L. Costa is another educational tool designed to support students with the development of their problem solving skills by providing an educational tool to access and utilise when dealing with complex or higher order thinking problems. The 'habits' engage the students in a problem solving process that involves 'strategic reasoning, insightfulness, perseverance and creativity' (Costa & Kallick, 2000). The application of each of the sixteen habits (See Figure 2) provides a scaffold from which students demonstrating emotional intelligence can develop a deeper understanding of a complex problem solving process.

	Persisting Stick to it! Persevering in a task through completion; remaining focused; looking for ways to reach your goal when stuck; not giving up.		Managing impulsivity Take your time! Thinking before acting; remaining calm, thoughtful, and deliberative.
	Listening with understanding and empathy Understand others! Devoting mental energy to another person's thoughts and ideas; making an effort to perceive another's point of view and emotions.		Thinking flexibly Look at it another way! Being able to change perspectives, generate alternatives, consider options.
	Thinking about your thinking (metacognition) Know your knowing! Being aware of your own thoughts, strategies, feelings, and actions, and their effects on others.		Striving for accuracy Check it again! Always doing your best; setting high standards; checking and finding ways to improve constantly.
	Questioning and posing problems How do you know? Having a questioning attitude; knowing what data are needed and developing questioning strategies to produce those data; finding problems to solve.		Applying past knowledge to new situations Use what you learn! Accessing prior knowledge; transferring knowledge beyond the situation in which it was learned.
	Thinking and communicating with clarity and precision Be clear! Striving for accurate communication in both written and oral form; avoiding over-generalizations, distortions, deletions, and exaggerations.		Gathering data through all senses Use your natural pathways! Paying attention to the world around you; gathering data through taste, touch, smell, hearing, and sight.
	Creating, imagining, and innovating Try a different way! Generating new and novel ideas, fluency, originality.		Responding with wonderment and awe Have fun figuring it out! Finding the world awesome and mysterious; being intrigued with phenomena and beauty.
	Taking responsible risks Venture out! Being adventurous; living on the edge of your competence; trying new things constantly.		Finding humor Laugh a little! Finding the whimsical, incongruous, and unexpected; being able to laugh at yourself.
	Thinking interdependently Work together! Being able to work with and learn from others in reciprocal situations; working in teams.		Remaining open to continuous learning I have so much more to learn! Having humility and pride when admitting you don't know; resisting complacency.

Figure 2 Habits of Mind

Costa provides educators with an accessible learning tool to assist students to develop and extend their thinking when faced with problem solving. For an emotionally gifted learner, employing the habit, 'Thinking about your Thinking', encourages the development of an awareness of their own thinking and application to the issues around them. Within this habit the students consider also the impact of their actions on others,

highlighting a link to the concept of social capital. The habit, 'Creating, Imagining & Innovating', invites gifted students to apply different paths of thinking and creativity when solving a problem. 'Thinking Interdependently', as a habit, works alongside cooperative learning as students learn problem solving strategies from their time spent working in a group.

Environmental Education

The Enviroschools model is an initiative that has been developed for New Zealand schools by the Ministry of Education. Local government funds Enviro facilitators who oversee a cluster of schools in a region in Canterbury. The facilitators assist schools in developing environmental education within the current curriculum programme. Each Enviro school is given an Enviroschools folder containing material that offers assistance and direction in the implementation of the programme. Schools are also given the opportunity to instigate structures within the school, for example paper recycling or worm farms. Once a school has accumulated a certain number of Enviro initiatives in their school they are eligible for a gold, silver or bronze Enviro Award (Enviroschools, 2009).

One key rationale is that engagement in environmental programmes equips students to become engaged and participate in the communities they live in and wider scale projects (Ministry of Education, 2012). As with the current New Zealand Curriculum, within the Enviro Schools framework, schools are able to establish a programme that is centred upon its own 'values' and community (Gourlay, 2011).

At the centre of the Enviro Schools' programme are students, who with the assistance of teachers, drive a vision to create an environmentally sustainable school. This vision impacts on how the students operate in the environment around them and their knowledge about the communities they live in (Enviroschools, 2009). With opportunities of leadership, development of environmental awareness and involvement in community problem solving, the Enviro programme provides a structure in which to place a gifted programme that is specifically aimed at extending the learning needs of this group of gifted students.

Part Three:

An introduction to Joseph Renzulli's 'Operation Houndstooth' and associated gifted models of learning connected to the application of emotional intelligence.

Gifted Models of Joseph Renzulli

Enrichment Triad Model

In the 1970s, Joseph Renzulli developed a teaching model specifically designed for developing learning paths for gifted and talented students (Reis & Renzulli, 2003). Called the Enrichment Triad Model, this model was successful in developing the creative productivity of large numbers of students through a range of different topics and areas of study (Reis & Renzulli, 1985). As Figure 3 (below) illustrates, the model consists of three stages of learning beginning with Type I which deals with exposure to learning experiences not necessarily contained within the school's normal curriculum. Type II activities are designed for active involvement in the thinking process. In the

final stage, Type III, students actively involve themselves in self-constructing a learning environment where they pursue an area of learning that is of interest to them.

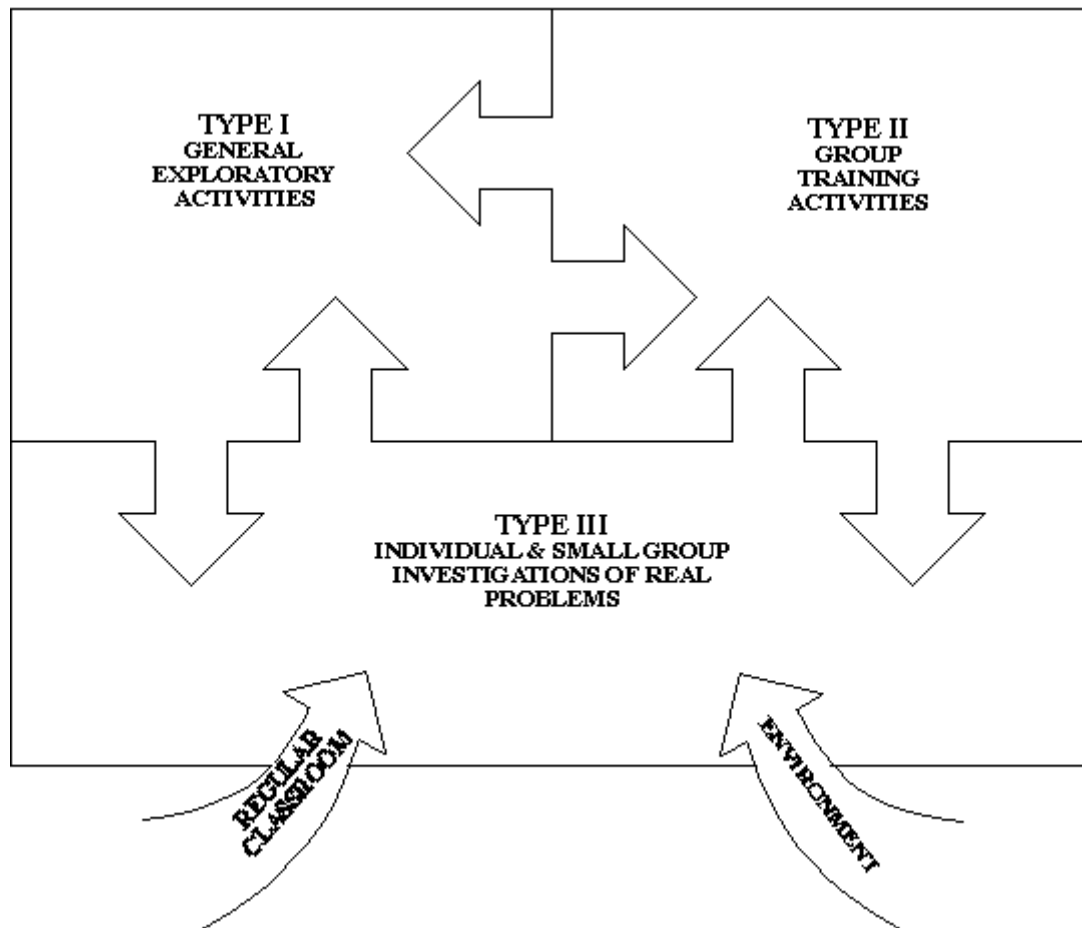


Figure 3 Enrichment Triad Model Gifted

Since its construction the Enrichment Triad Model has been widely successful in schools in the United States and overseas where educators have utilised it to form gifted and enrichment programmes (Reis & Renzulli, 2003). Identified weaknesses in the model are the lack of school based assessment procedures to assist educators when

planning the next stage in programme development, especially where students who come from a different needs base, enter into various school environments (Olszewski-Kubilius, 1999). From the Enrichment Triad Model, Renzulli developed his Schoolwide Enrichment Model that identified schools as sources for talent development (Tools for Schools, 1998). Schools were encouraged to use details of the model to develop programmes that would cater to the needs presented in each individual environment. However within these two gifted programmes emotionally gifted students were still at risk of feeling isolated and without an outlet for their issues if they did not have access to developing relevant problem solving skills in an authentic context (Ma, 1998).

Operation Houndstooth

As a result of his research on social capital, moral reasoning and positive psychology, Renzulli has developed a learning framework entitled 'Operation Houndstooth'. Operation Houndstooth is an extension of Renzulli's Enrichment Triad Model. Not only has Renzulli sought to address the role of positive psychology but also that of co-cognition in learning. When developing his Enrichment Triad Model (See Figure 4) Renzulli identified a three ring conception of giftedness (Reis & Renzulli, 2003). Student giftedness was able to be identified across three clusters of above average ability, high levels of creativity and high task commitment.

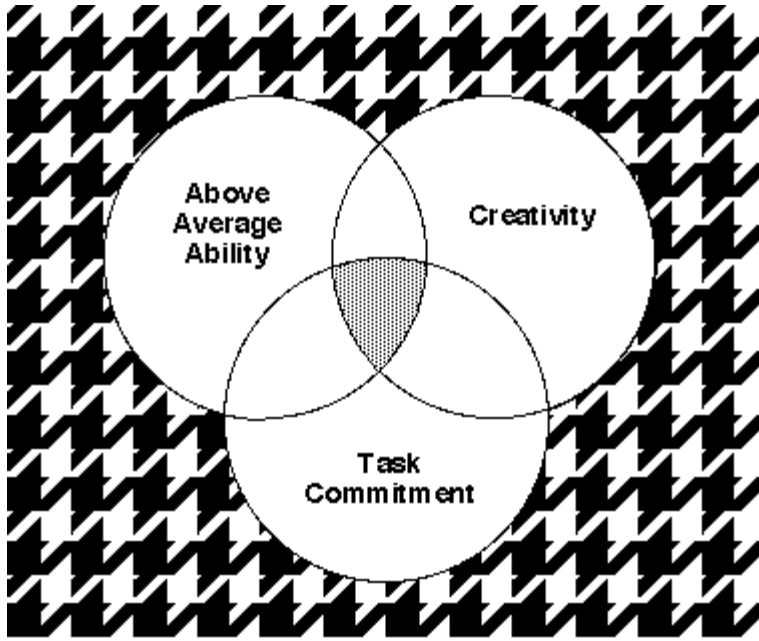


Figure 4 Three-Ring Conception of Giftedness

Renzulli's concept with the Three Rings is extended further with the creation of the Houndstooth Model (See Figure 5). The rings support the framework of Operation Houndstooth with the co-cognitive factors of: Optimism, Courage, Romance with a Topic/Discipline, Sensitivity to Human Concerns, Physical/Mental Energy, and Vision/Sense of Destiny (Renzulli, Koehler & Fogarty, 2006). In bringing all of these co-cognitive factors together, Renzulli's Operation Houndstooth aims to assist emotionally gifted learners in fostering academic achievement, research skills, creativity and problem solving skills.



OPERATION HOUNDSTOOTH

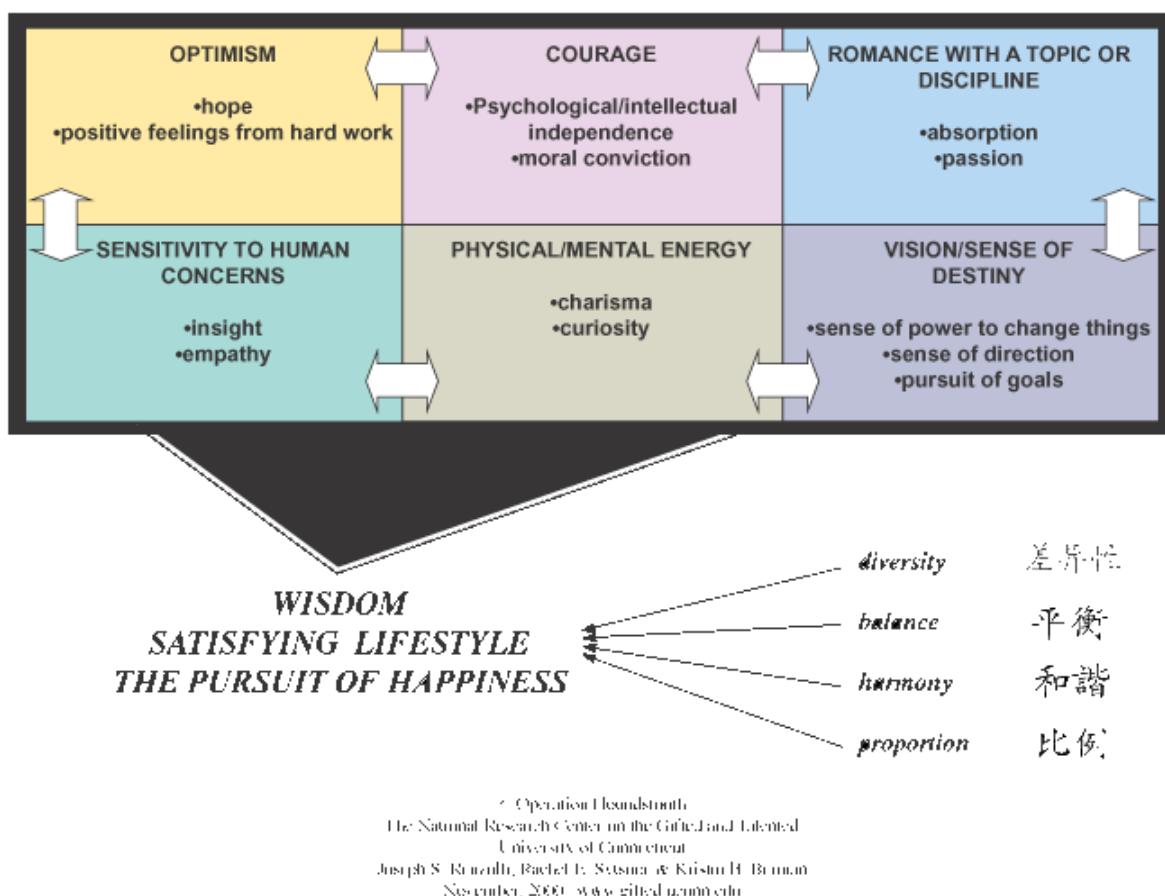


Figure 5 Operation Houndstooth

Although the Houndstooth Project is a recent model in the area of gifted education, it provides educators with a framework in which to adapt and change their learning environments to encompass students who have the potential to become our social leaders of the future. The Houndstooth Project provides a base to educate gifted students from. Aspects of both the New Zealand Key Competencies and Values can be easily integrated. Self-management from the key competencies is a skill that can be taught within this framework to assist gifted learners to become competent learners and

leaders. Likewise, characteristics such as: 'being enterprising', 'resourcefulness', 'making well-informed choices through rational decision making' and 'considering consequences before taking action' reinforce and consolidate the same skills that are sought after in extending the skills of gifted problem solvers (New Zealand Curriculum, 2007).

The application of each part of Houndstooth when undertaken by gifted students involved in community projects (Direct Involvement II), according to Renzulli, Koehler & Fogarty (2006), facilitates the 'internalization of the co-cognitive factors' that result in the development of a community producing social capital.

At this point it needs to be established why Operation Houndstooth is particularly suited to meeting the needs of emotionally gifted learners in a New Zealand educational setting. As discussed earlier, this is especially relevant in regard, as discussed, to the implementation of programmes that incorporate the Key Competencies and Values of the new curriculum. Part of the answer lies in its flexibility to be adapted into most educational settings. As recognised earlier, the Houndstooth Project has emerged from the earlier Enrichment Triad Model and the Three Rings of giftedness. This latter model works with students who have been identified by educators as operating with a higher level of thinking and creativity than their peers. The model provides schools with a framework to meet the learning needs of students who are already working outside of the national curriculum. The Houndstooth Project goes a step further as an intervention framework which may begin with the teacher or facilitator leading the students through

developing the skills required to address the issue that is being examined. The students then move through to the final stage where they become the leaders and facilitators directly responsible for bringing about social or environmental change (Renzulli, 2002). Each stage in the framework reflects the moral developmental stages from the work of Kohlberg. From its initial development through to its implementation the Houndstooth Project is specifically designed for those learners who display the characteristics of emotionally gifted learners.

While an adaptation of the Houndstooth Project can be implemented into most educational settings as becomes evident when the students become directly involved in the Project, there is a level of participation that can only accommodate those learners who actively display a higher level of emotional empathy or understanding of social and environmental issues. This is the point where the model aligns with its roots as a tool for gifted education.

Inquiry Learning

Yet the Houndstooth Model does not stand by itself as the only framework for social and environmental problem solving. Inquiry Learning is another framework upon which to base this current research study. Inquiry Learning, by definition does immerse students in a problem-solving role. Kuhlthau & Maniotes, (2007) state that Inquiry Learning is directed by students accessing information in order to expand their knowledge and understanding. A classroom that incorporates Inquiry Learning does provide a learning environment that promotes meeting students' needs through

situations that focus on students' emotions and thought processes. However the Houndstooth Project takes the inquiry process even further by working not only with cognitive thinking but also with co-cognitive features within the six components of the Project (Renzulli, 2002).

This research investigation is built around the exploration of the possibility of providing an avenue for the introduction of the Houndstooth model into primary schools within the context the New Zealand Enviro Schools project. Within this project are opportunities to meet some of the learning needs presented by emotionally and socially gifted learners (Nucci, 2009).

Summary

In the first part of this review I examined the literature related to the identification and definitions of emotional intelligence. Also presented here was the range of ideas and strategies connected to the implementation of programmes within an educational setting that seek to support students displaying emotional intelligence. In part two, the focus was on models of learning that foster the development of emotional intelligence as well as introduce the development of specific skills for those learners who display gifted characteristics. The final section discussed the models of gifted learning established by Joseph Renzulli and introduced 'Operation Houndstooth'- a co-cognitive gifted learning framework which is implemented within an environmental education programme in this piece of research.

Having reviewed and outlined current ideas and investigative thinking around emotional intelligence and giftedness in this chapter I move on in the next chapter to discuss the methodology and methods employed while conducting the research.

Chapter Three: Research Methodology

This chapter describes the methodology employed in this research investigation by first examining the positioning of the project within that of qualitative research. In particular, the application of a qualitative approach allowed for the observation of the project's participants in their natural school environment. The next section identifies the methods for the conducting the research which were a single-case study placed alongside action research. The chapter follows with a discussion about the sources of data involved in the project including interviews, observations and journal writing. Next the chapter addresses is the placement of data collection, participant selection and ethical considerations. The final section describes data analysis methods where documents, journals and observations are brought together in order to identify the themes that have emerged from the participant's participation within a gifted learning framework and environmental programme.

Research Methodology

The aim of this research is to find out whether the implementation of the Houndstooth Project is capable of providing a particular group of gifted learners with a learning framework that will develop their social problem solving skills and leadership potential. 'Operation Houndstooth' is a gifted learning model developed by the educational psychologist Joseph Renzulli. Within the model are six co-cognitive components that seek to enhance the abilities of gifted students. The research itself was carried out in the natural setting of the school environment and the participants – a group of gifted learners, were involved in the process as they would be in any school extension

programme (Hitchcock & Hughes, 1995). The research design took the form of a qualitative study. The qualitative nature of the research allowed me to observe how the co-cognitive features of the Houndstooth project work together with an environmental project.

As Hitchcock & Hughes (1995) urged, I was interested in being able to qualify the success of the project from the perspective of the students not by outcomes set by an outside observer. By utilising a qualitative design I was able to capture the responses of the students as they participated on the programme, by listening to and recording their discussions and the comments they shared with me. The students were not placed under pressure by the expectation of producing a set of answers that they thought they should make. Instead I attempted to interpret the student's learning from recorded responses, journals, questionnaires and other observational data made while they participated on the project.

Using an interpretivist methodology (Alasuutari, Bickman, & Brannen, 2008), I recorded and analysed any patterns that I observed occurring throughout the research and constructed meaning about the impact of these patterns on the programme (Mills, 2007).

Overview of Qualitative Research

Qualitative research is an attempt by researchers to interpret and make sense of 'things' in a 'natural' setting. The characteristics of qualitative research seek to develop and

expand an understanding of how people conduct themselves within their social sphere (Patton & Cochran, 2002). This type of research is about being able to describe what is occurring in front of the researcher, as Lowhorn, 2007 describes, ‘an attempt to describe studied behaviour’. When placed alongside qualitative research, quantitative methods assist in answering the ‘what’ and ‘why’, presented, not ‘how many’, which would be the focus of quantitative piece of research (Patton & Cochran, 2002). The application of qualitative questioning methods allows for open ended questions, interviews which can examine experiences and feelings, observations of behaviours and actions in the field and documents such as open ended surveys (Patton, 2001).

While engaged in qualitative research, a researcher is able to gather a substantial amount of information from observations about the learning and language of the students in their school environment (Berkwits & Inui, 1998). The focus of this research sought to validate the need for those gifted students who display emotional intelligence to be catered for within a school’s environmental programme. The project required a qualitative approach that was not about measuring but interpreting the learning and interactions of the group of students participating in the research. The positioning of the research within a qualitative methodology allows for the information to be collected on feelings and ‘motivations’ in chosen behaviours (Berkwits & Inui, 1998).

Data collection

Case Study

The application of a case study approach in qualitative research allows for the analysis of people or events. The participants of a case study and the researcher may work closely together. The construction of reality is by the participants and the information that comes from the collection of their discourse. Robert Yin (1993) and Robert Stake (1995) suggest that case studies may be conducted as exploratory, explanatory, descriptive, intrinsic, instrumental or collective (Tellis, 1997). This also includes a range of data gathering tools which can be applied in case study research: 'primary source materials and documentary evidence', interviews, observations, 'archival records', 'artefacts', interviews, surveys and questionnaires.

Applying a case study approach allowed me as a researcher to analyse the participants and their responses to the learning models and experiences, using different 'data' sources. This also allowed for the research to be studied through various types of data not just one source. Within a case study, the responses to experiences and emerging 'patterns' and 'themes' can be explored with the assistance of the different data sources. The case study design was also able to be applied to investigating an explanatory question with the direct aim of gaining a first-hand understanding of the changes that do or do not take place while attempting to answer the question through the research undertaken in the case study (Green, Camilli & Elmore, 2006).

Action Research

Action research involves a process of “learning by doing”, involving a group of people in the identification of a problem or issue, organising a way to ‘resolve’ the problems and ascertaining whether the solution was successful. If the group decides that the solution does not address the problem then there is another attempt to try again. Kurt Lewin, a German social and experimental psychologist, in the late 1940s focused some of his study on developing an approach to solving social problems and the instigation of action research. Eric Trist, an English social psychiatrist was also another major contributor to Lewin’s action research through his work with war-time soldiers (O’Brien, 1998).

The application of action research to the project also allowed for the development of a “holistic” method to the problem solving section. The participants were able to be involved in doing more than just applying themselves to gathering and interpreting information. Action research involves a process of planning, action, observation, reflection and revising a plan. This cycle was able to be applied throughout the project as the participants attempted to readdress the problems connected to the communal outdoor space. A range of action research tools could also be applied such as: journals, documents, and observations of people, recordings, questionnaires, surveys, interviews and case studies (McBride & Schostak, 2005).

The participants

Participant Profile

The five participants involved in the study came from a selection of Year 7 and Year 8 students. Three of the students were currently involved in the school's Enviro Schools programme. Each student displayed the complex characteristics of emotional problem solving but did not have the strategies or knowledge that would allow them to understand or utilise their unique skills and learning. Three of the students were from Year 7 and two from Year 8. There were also another five students involved with the programme, which gave the group an even split of Year 7 and 8 students. For the purpose of the research, each student has been assigned a letter to represent their names.

The students met as an extension group once week for a period of ten weeks, split over two consecutive terms. Each week saw the students engaged in a problem solving/planning process that involved community consultation and the creation of an outside design to meet the various requirements of the parties who had an interest in the future of the land. At the commencement of the project, significant time was spent examining the Houndstooth model as a vehicle for learning, with the participants consolidating their understanding of the model and their placement within the model.

Participant Selection

The purpose of this study was to implement Renzulli's Houndstooth Project within the school's Environmental programme. The programme was attempting to meet the co-cognitive learning needs of a group of gifted learners. The students who were selected

had all been identified as gifted in the area of emotional intelligences and leadership by the primary school they attend. The school used PAT's, Numeracy testing, school exams, student profiles, peer interaction and parent interviews to identify students who will participate in a gifted programme. Each of the Year 7 and Year 8 students had been involved in the school wide environmental programme. A majority of these students also held roles of responsibility on the student Enviro group.

Once verbal consent from the classroom teacher had been given, each student was given a letter of explanation about the project and consent forms that needed to be filled in by their parents or caregivers. Five students had already been nominated by the Associate Principal who was also the syndicate leader for the senior school. Once academic and ethical approval had been received I proceeded with discussions about selection with the Year 7 and Year 8 classroom teachers.

Methods of data collection

As already stated, the research took the form of a single-case study combined with an action research project. By definition it takes the form of a case study because the research is applied only to a specific group of gifted learners. However, I also combined it with the elements of action research, which allowed for me, as both the facilitator and the researcher, to investigate the ways in which I was able to bring about change for this group through establishing an environmental programme that was based on the learning framework of Operation Houndstooth (Mutch, 2005).

Using a case study design assisted in establishing whether Operation Houndstooth, with direct observations within the setting of the school, had improved the education and learning opportunities for the students. Under the case study design the following tools were utilised throughout the research:

- Facilitator observation
- School records
- Teacher observation (Mutch, 2005).

Action research was placed alongside the case study because although the focus for the research was primarily on the application of Operation Houndstooth as a gifted learning framework, I was also a direct participant as at the same time, I was conducting an inquiry into my own targeted practices my practice with this group of learners. Based on my findings, I hoped also to effect a further outcome by bringing about a change to the way the school itself conducted programmes for emotionally gifted learners (Hitchcock & Hughes, 1995).

For the purposes of action research design, I used the following tools throughout the research:

- Interviews
- Observations
- Journals for participants and researcher (Mills, 2007).

Individual interviews

In February and March 2010, baseline data was collected on each of the students selected for the research. An interview with a specific set of questions was held with the Year 7 and Year 8 teachers to ascertain the current level of leadership and contributions to classroom discussions shown by each student. An interview was conducted with each of the students to provide baseline data on how they viewed their place in the classroom and their issues of concern about the world around them. These interviews included questions such as: Did they see themselves as capable of assisting with making a difference in their local community? What avenues did they identify as being open to them to contribute to community problem solving? A final interview was scheduled to take place with the parents of each of the students in order to provide information about their level of engagement in social and environmental issues.

In November and December 2010, interviews with the same set of specific questions were conducted with all of the students, parents and caregivers and teaching staff. These provided a comparison against the baseline data from the start of the year and information on the progress of each participant within the Houndstooth Project.

Direct Observation

As a facilitator-researcher I also completed my own journal and recorded observational notes on the progress of the project and the participants. I also held weekly discussions that focused each participant on the outcome for that week in reference to the Houndstooth Project.

The school principal, who worked each week with the Year 7 class in Science, was also involved, offering an outside observation of how the students had responded to their learning in the classroom and the extension of their strengths while participating in the project.

Journal Writing

Throughout the course of the study each student also completed a written journal. The students were encouraged to record how they felt about working within the project to deal with a local ecological issue affecting the local school community and the impact that it had on their own day-to day learning in the classroom. The students were given prompts to assist with their reflection, aimed at helping them to make a connection to the skills and strategies they were developing in the project and the instigation of these same skills in the classroom.

As mentioned, the weekly journals became a source of information on the perceptions and responses of the students and the researcher about the outcomes of the study. The students were able to record their reflections about their individual progress with the jobs of the project they were responsible for. Some students reflected on the state of the outside garden area and the plan they were designing for this learning space and the changes that were emerging. Others used their journals to record where they saw themselves working and connecting within the Houndstooth model. The use of the journals allowed for the recording of responses to the project, including any self-realisations by the students. Often as a session would begin to wind-down, the group

would meet back in the classroom where the students would quietly write their reflections and discuss the next stage of their work.

The journals also allowed for any reflections to be made by myself about the project and the students as I observed in their interactions and discussions. As the researcher and facilitator, I was able to place myself within the various learning areas whether in or outside the classroom and observe the discourse that was taking place each week. Throughout the study I collected a series of field notes on my progress and participation in the research. Along with the journals, I used this data as a source of comparison to develop my interpretations about the application of the project, assisting me as I facilitated my understanding of what was occurring in the project (Alasuutari, Bickman & Brannen, 2008).

Trustworthiness of data

Triangulation

A number of data sources contributed to this research project. Cross-checking information from these sources provided a test of reliability. On several occasions throughout the course of the study, the students discussed with the researcher the co-cognitive factors that they were attempting to establish and extend within the project. Each discussion was recorded in my journal and analysed in an attempt to determine the connections the students were establishing in relation to the gifted Houndstooth framework and for evidence of emerging themes. Triangulation of the data took place

across the study with the collection of data from interviews, continuums, journal entries from the participants and observations.

The main methods of data collection included: individual interviews, direct observations and weekly journal writing by the students and by me. To verify my lines of evidence it was important to have triangulation taking place as I analysed the weekly data I collected (Green, Camilli & Elman, 2006).

Ethical considerations

The nature of case studies often lends itself to the observer working in close proximity with the participants involved in the case study (Alasuutari, Bickman & Brannen, 2008).

At all times throughout the course of the research I had to always consider the rights and privacy of the students I was working with. Material from the research was kept in a lockable filing cabinet or secured in a filing system at my place of residence. As a teacher who was employed by the school and had already established a rapport with each of the identified participants, I had to be careful with maintaining the mantle of that of the researcher and not that of the teacher. I had to allow the research to unfold rather than attempt to move the research in a direction that I thought it should be heading in. I would outline for myself, before each session, the outcomes or behaviours that I would be focusing on observing or recording. Once I had spent time initiating the commencement of the session I would need to move back into the role of researcher and let the students move into their areas of responsibility. Parents, caregivers and teachers needed to be kept informed of the progress of both the research and that of the students participating on the project. This took place in the form of informal discussions that

were focused solely on each student's individual progress in class and in the home learning environment.

I had been a teacher at the school in which the study took place for the previous four years, during which time the participants had worked with me on the school's Enviro programme. I was aware that the trust required as the facilitator-researcher in this case study and action research project had already been established. I was also aware that I exerted power in my role as a teacher especially as I had already taught some of the students involved in the Enviro programmes. In my initial meetings with the students about the project, I made it clear to the participants that, although I was the facilitator of the programme, they did not have to feel that they must do things for me. They always had the opportunity to come off the programme, and if they felt they could not share any concerns with me then they needed to do so with their parents or classroom teacher.

Analysis of the data

As described, this study took the form of a qualitative piece of research which aimed to bring together all of the information gathered about the application of Operation Houndstooth in a New Zealand primary school setting while placed within an environmental programme of learning. Using all of the vital information gathered from interviews, school documents, journals and observations, the data was analysed using a thematic analysis (Mutch, 2005). Once I had become familiar with the data presented from the initial data collection, I was able to begin to establish identification codes related to the observations and experiences of each individual student. Throughout the

project the initial themes had been identified and with the amount of data increasing from observations and discussions, patterns began to emerge. Although some analysis of data took place in 2010 while the research was being conducted, the data analysis was predominantly conducted throughout 2011, with allowances being made due to interruptions from the Christchurch earthquake in February that year.

The first stage was to distinguish the major themes that started to emerge from the interviews, school documents, learning continuum, journals and observations. Initially the themes were around social communication and problem solving between the students. A filing system which had been put into operation since the commencement of the study, allowed me to segregate the data as it was collected into prescribed sections for data analysis. All data was analysed for key words or themes which tied to the co-cognitive factors of Operation Houndstooth and the learning outcomes for the students, teachers and parents. For the students, this initially appeared to be based upon the co-cognitive component labelled, 'Romance with a topic or discipline' from Joseph Renzulli's 'Operation Houndstooth' model. Within this component, the students identified with their interest in the natural environment. Interesting data that appeared outside of the Houndstooth theme was also recorded as well as areas that were identified as requiring more data (Davidson & Tolich, 2003). One example of this was the confidence of the students when they participated in social interactions later. Once key themes began to emerge they were coded and the data analysed again so that the key themes could be highlighted and grouped together. At this point the data was re-examined for any patterns that emerged from the research. A set of criteria determined

how each theme was grouped (Hitchcock & Hughes, 1995) related to social communication, problem solving and the components of the Houndstooth model.

Analysis of the data was then focused on determining the major themes that appeared from the research and anything that emerged to tie the themes from the research together. From here, consistency and resonance of the themes was validated and substantiated both with the work of other people in the field of gifted education, and with the Operation Houndstooth model. Throughout the analysis I was attempting to establish a connection between the key themes revealed in the data and the experiences of the students themselves (Mills, 2007).

Summary

The purpose of this chapter was to specifically identify the methodology of this research project as that of qualitative research. This was applied to the question of whether the Houndstooth gifted model of learning was capable of providing emotionally gifted learners with a learning framework that would develop their social problem solving skills and leadership potential. The project was carried out as a single-case study placed alongside action research to allow for the collection of different data sources and analysis of the experiences of both the students and myself as researcher. The chapter continued with a discussion about the methods employed for data collection, participant selection and ethical considerations. The final section examined the process of analysing the data to observe the identified themes that emerged from the research. The following chapter now examines the findings that have emerged from this analysis.

Chapter Four: Findings

This section deals specifically with the outcomes of the data that was collected throughout the project. As discussed in the previous chapter, data was sourced through interviews, observations, questionnaires and journal entries. The students were asked to devise a solution for a problem that the school community was facing around a piece of land that was being used by some classes and the school's Enviro group but which had become a holding area for unwanted items. Previously it had been the backyard garden for a house on the school site. In its current form the building was being used as an art and science block. The Enviro group had access to the area behind the house as a home for their worm farms.

At the beginning of each session the group examined the Houndstooth model led by the facilitator, indicating the current stage they identified with for that week. The students facilitated a discussion about the work that had been achieved previously and the progress that they wanted to achieve in the new week. At the end of each hour and half session, the students would spend some time discussing and monitoring the outcomes of the session and reflect this progress in their journals.

The students had to initially identify which school community groups had a vested interest in the area.

These were identified as:

Other students not a part of the project

Teachers

Principal and the Board of Trustees

Board of Proprietors

Caretaker

School Enviro group

Identified themes

“It’s been kind of lucky because it could have been any other kid in the class and also before this it was kind of bad because if I had a problem I just wouldn’t tell anyone, I would just be ‘auff’ it will be fine but now I feel I can tell people”

(B, Interview).

From the beginning of the programme, the theme of social communication and problem solving were identified by myself as emerging from the project. The six components of Renzulli’s ‘Operation Houndstooth’ are: Romance with a topic or discipline, Vision, Physical/Mental energy, Sensitivity to human concerns, Optimism and Courage. These additional themes provided the basis that together represented the students’ learning journey as they proceeded through the project.

Social Communication

At the commencement of the project, the initial bringing together of two different year groups was contentious, as both groups appeared to be wary of working together. The first session in the classroom appeared awkward for the students but this began to change as the group headed over to the section of land that was to be developed. Once

the group had moved from the classroom to the outside area, bonding started to take place over how to deal with unwanted school materials and items. Conversations between the two year groups centred on various problem-solving suggestions for dealing with the community space. During this first session a leader began to emerge. This changed the dynamics of the student discussion as this particular student began to ask the other students for their ideas and prompted the initial direction of the group.

I do feel as though I can contribute to group solving because I like working in groups or pairs and I like to sit down and work on things when I'm up to it
(A, Journal).

I feel that I can contribute more to group problem solving tasks. I have more confidence in voicing my opinion
(E, Journal).

The next step for the group was to identify the school community groups who had a claim to the land area and the materials deposited around on it. Once the students had discerned the question of ownership they proceeded to organise interviews with the various parties. At this stage the students were finally able to define the organisational and storage problems that the school community was facing with this outdoor space.

The area had... 'weeds, waste materials, the gate shuts suddenly, waste playground equipment, old wiring in the corner, unkempt gardens, damaged seats – this looks like a junk yard
(C, Journal).

In small teams, the students conducted their meetings with the principal, caretaker and the deputy principal as chairperson of the Board of Proprietors.

Interview questions for school caretaker included:

How easy is it to get rid of the rubbish? What is your vision for the outside area? How much work can you do and what can we do to help? What stuff can you remove immediately and what things may take a long time? What things can be put into storage? How much space under the house can we use for storage?

(C, Caretaker Interview).

The students were able to have access to the expert knowledge of a landscape architect who had offered to assist the Enviro students on a volunteer basis, as part of a local business initiative. This experience meant the students had access to a professional plan for tackling a community problem and applying a design process to their problem solving. After consulting with the school, with assistance from the student Enviro group, through a school wide survey, the students were able to break the project into smaller tasks. With assistance from the landscape architect, some of these tasks were sectioned into specific garden areas. At this stage the students selected and defined their individual roles through their weekly meetings and discussions with each other.

Solutions to the various issues were constantly discussed and each time a way to move forward was found by the group.

Question: What stage is the planning at? It's at the stage where we need to sort out what else to keep and get rid of. We also need to pass our ideas through the Enviro Group

(B, Group Discussion Week 3).

Obstructions to progress were identified such as concrete path that was a permanent fixture or particular areas of vegetation. The students would then have to organise a meeting with the concerned party such as the principal, Board of Proprietor chairperson or the caretaker. The information collected was reported back to the group.

During these weekly discussions, the students would report on the tasks or issues they were working through and general discussion would follow. Issues for discussion were varied. For example, behind the back of the house was a large gas cylinder that had to remain as the gas was being supplied to the house. It was a dull grey colour that would not suit the vision the group had for this area. After some time considering how to incorporate the gas cylinder into the new designs Student E suggested painting it which the others all agreed was the best solution. There was also a large amount of playground equipment that the school no longer had a use for. Some debate was held about how to utilise the equipment as part of the design for plants to grow along but then a suggestion was made to sell it. A sub-group was formed to deal with this issue and the intent communicated to the principal. Once consent was gained, two of students, with the help of the office staff, used the school 'Trade Me' account, to sell the playground

equipment. The successful buyer was located and pickup of the equipment organised, resulting in the removal of these unwanted materials.

Problem Solving

Applying the Houndstooth model, the students had to identify the steps involved in using problem solving to address the school's community issue of developing an outside space that had become a storage and dumping area into an environmental learning space. The initial set up stage was to identify and consult with all the school groups who were utilising the outdoor space. As already discussed, the students organised themselves into groups to speak with principal, caretaker, deputy principal, classes and the student Enviro group. Led by the facilitator of the project the students were able to identify the skills they were beginning to utilise in this process: communication/consultation, listening, organisation, connecting to past knowledge, limitations, analysing and assessing. As the project progressed the students were able to make connections to the elements of problem solving and how they would use these skills to respond to wider community issues.

First I'll get all the stories from the people involved. Once I have figured out if there are any other problems and I'm sure of the main problem I will brainstorm what I can do to solve it. I would start by writing down ideas of what I could do then pin it down to the final six until we get a solution everyone agrees on

(C, Interview).

At the commencement and completion of the project, the students were asked to complete a questionnaire that was designed to gather information about the skills they believed a person relied on to be successful at problem solving. The intention for the group was to develop the ability to recognise relevant skills required for successful problem solving as they actively engaged in a community problem solving process. I have set out the pre and post skill development as reported by the students in the questionnaire, below. The post-project skills of problem solving are written in italics.

Identification of problem solving skills pre and post project-*additional recognised skills at the completion of project*

Student A - cooperation, social, thinking outside the square, *numeracy skills and listening*

Student B - left blank by student, *problem solving skills*

Student C - maturity, realistic, *patience, determination, some maths skills, empathy, experience with problem solving*

Student D - patient, fixable, thinker, *smart, observing, strong thinker, flexible*

Student E - vision, wisdom, *think flexibly, has the ability to see two different points of view, patience, see outside of the box*

(All students, Problem solving questionnaire).

These comments highlight the acquisition of skills over time involved in the project. They reflect the shift in all but one of the students' perception of the skills that individuals bring to a problem solving role.

At the start of the project, the students placed themselves into work teams which dealt specifically with planning and design, garden and rubbish collection, school-wide survey - which the group delegated to the school Enviro group to under-take, selling unwanted items on Trade Me and working with the caretaker. As the students participated in these small groups and the whole group discussion about the progress of the project, they learned to break a problem into manageable tasks. This process was assisting the students in establishing for themselves, skills and strategies for addressing problem solving in small groups, the classroom and the wider community.

I feel the ability now exists to think through and solve problems. I'm able to formulate an individual plan to solve a community problem. I have been better at doing organising and thinking of other ways of doing things

(A, Interview).

The skills that were consolidated throughout the participants' time on the project were also transferred into the activities they engaged in, which involved other students in the classroom as well as siblings and adults in their home environment.

I do sometimes feel I can contribute to group problem solving tasks. Because mainly I have stress towards problem solving and it's very hard finding things out but still I normally feel active towards it. This problem solving group has given me more knowledge about things that would work and won't

(C, Journal).

Instead of facing a challenge feeling overwhelmed by the enormity of the issues being presented, each student was able to make connections to what they understood about an

issue and attempt to use their problem solving skills to develop a comprehensive solution.

When faced with a problem at school I try to recall past knowledge about the type of problem and to see if I had to solve something similar before. I am able to solve problems with more ease than before

(B, Interview).

I do feel that I have more efficient skills to assist with problem solving because I can think flexibly when I am in a good environment for me. I find myself reflecting on how to solve problems I notice outside in the community and I have noticed that I can think very flexibility when I put my mind to it

(A, Journal).

The change in how the students perceived and applied themselves to the role of problem solvers was also evidenced by their classroom teachers. Some of the students had previously not contributed their ideas or opinions during problem solving in class. Their teachers were now able to observe a gradual change in the dynamics among the students.

Participation in the project has allowed E to deal with all issues in the classroom

(Classroom Teacher, Interview).

C grew in ability to manage himself and discussions in front of the class

(Classroom Teacher, Interview).

The application of problem solving was not only evident at school. Parents of the students were also able to observe a new awareness and attitude towards instigating answers to problems that presented themselves either at school or home.

A has developed a more analytical approach to problem solving. A has increased in sense of power about ability to participate in changing things
(Parent, Questionnaire).

Greater discussion at home about the problem solving process and transfer into wider school enviro issues. C can discuss implications of decision made in problem solving
(Parent, Questionnaire).

The participants were able to demonstrate that the skills they were utilising for dealing with the issues and concerns within the project had transposed into the work they completed in class and their observations about wider concerns in the community.

Operation Houndstooth

From the start of the project the students spent time becoming familiar with the Houndstooth model as it gave them guidance around the processes they were involved with. Each component of the model was examined and discussed as a whole group. The facilitator initially provided examples of how the work that was being achieved linked to the model. In the latter part of the project the students themselves were able to propose the real life examples that applied to the model. During the first couple of

sessions, the students identified with the component of 'Romance with a topic or discipline' through their concern for the environment. This evolved to also include the additional components of 'Optimism' and 'Courage' as the project progressed. As the group engaged with the model each week the students were able to discuss, with examples, the stage that they currently identified with on the model.

Courage: I have courage to talk to people that I don't usually communicate with and that I usually try to avoid talking too. I might have got someone else to do it for me

(E, Journal).

During a reflection time at the beginning of each session the students were able to leave behind what was happening in the classroom and, through discussion, identify with the outcomes that they wanted to achieve for the new week.

Recorded below are the final comments from the students indicating the components they identified the group actively engaged with at the end of the project. Each comment validates where the group was operating within the different components of Operation Houndstooth:

Optimism

We now have knowledge of the bigger picture

From spending more time with everyone with similar thinking

We have become persistent to achieve things

Courage

Facing fears

We can share with others after being shy around them

Learned to push action through

Romance with a topic or discipline

Environment

School community that we are enhancing for the future

Vision

Less clutter to make a better area for the school

Year 8's leave before project is finished but feel good to have still worked with the vision

Physical/Mental Energy

Many ideas have been shared

Listen, record and organise ideas

Sensitivity to Human Concerns

Listening to people's concerns about the garden

Listening to all ideas not just your own

(Individual Students, Observation).

Demonstrating their engagement with the model confirmed for the students the progress that had been made by the group to address the problem of the cluttered and disorganised outside community area of the school. The students had a vision for the future which, for the Year 8 students, would continue into the following year. Each

person was able to feel, through their connection to the model, a sense of purpose and contribution to a greater cause.

The students were also able to identify their individual positioning on the model, reflecting the connections that had already been established by the group.

Individual participant comments illustrate this:

Participant A - Vision

Nearly there – coming together

Participant B - Optimism

Even at the beginning on the right track and all the planning is done

Participant C - Optimism

I know I am on the right track we are actually going to get there

Participant D - Optimism & Physical/Mental Energy

We are on the right track. The Year 7's will carry on with the work that the Year 8's have done. They can take our place

Participant E - Optimism

Leaving it in capable hands. Continue pushing it through because Year 7's will finish it

(Individual Students, Observation).

There was now a feeling of optimism when faced with a problem or an issue. By having an affinity with a component of the model, the students were able to explain which part

of the problem solving process they were involved with and the likely outcomes for the future.

Operation Houndstooth had changed not only the perception of these learners as to how they operated as part of a problem solving group but also their ability to apply these skills in their classroom learning space. The classroom teachers noticed a change in their thoughts and assistance in the classroom.

Houndstooth gave the students a framework to work things out. A vehicle to develop a particular leadership style
(Classroom Teacher, Interview).

Global Issues

Minor themes that became evident from the data, related to addressing problems on a national or global scale, to confidence in the classroom and to leadership. One of the intentions of the research was the hope was that, as a result of taking part in the project, each student would establish problem solving skills and strategies that would move with them from their primary to secondary schooling and beyond. Parents were asked to comment if they had noticed an increase in the awareness that each participant demonstrated in their observations about what was happening around them as a result of participation on the project.

Many parental comments affirmed this development in their children.

A shows an increased awareness about national and global issues, mentioning relevant facts at home

(Parent, Interview).

D will often chat about the effects of events or how we are treating the environment and what she thinks the outcome will be

(Parent, Interview).

These particular students were beginning to cement the application of their problem solving skills to issues of a larger scale around them. This consolidation would hopefully establish links with different environmental and global issues as they progressed through the different stages of their schooling and later in adult life.

Confidence

As feelings of positivity and optimism about the project developed, the emergence of these attributes began to permeate into the classroom environment of the students. The classroom teachers would comment on a student's progress or interaction in class during the project.

D has developed self-esteem and organisation while in class

(Teacher, Interview).

B is able to now converse more confidently with adults. B has learned to work with different points of view

(Teacher, Interview).

This observation was not just confined to the classroom as parents also noticed this new attitude about aspects of learning from the students.

C has increase in confidence when now taking part in other aspects of learning. Better ability to look on the bright side for himself and others

(Parent, Interview).

E's confidence developed across the year which assists with participation in learning. Increase in positive feelings from participation. E feels she has a part to play

(Parent, Interview).

The students themselves were also able to reflect on how being involved in the project and connecting with emotional side of their learning had impacted on how they felt about the way in which they conducted themselves.

I have an increase in belief that my own ideas can make a difference

(B, Student Questionnaire).

I feel confident in giving opinions and my answers have increased. I can think better through questions which results in more correct answers

(D, Interview).

Leadership

Within the participants' increase in confidence when dealing with problems and when contributing to classroom interactions, a theme of future leadership can be identified.

D is keen to be helpful in problem solving and has demonstrated potential especially in small groups

(Teacher, Interview).

E shows good leadership in problem solving in the classroom

(Teacher, Interview).

The emergence of this theme is able to be linked, as mentioned in previous chapters, to the concept of social capital. With the identification of emotionally gifted students in a school learning environment comes opportunities to develop leadership skills and promote future generations of leaders and national problem solvers (LaBonte, 1999).

Limitations

Initially the ten week project was scheduled to run over two terms, allowing for school holidays and senior school programmes. In week 8 of the project, the Christchurch earthquake of September 2010, temporarily interrupted the project. The school was closed for a week due to health and building restrictions. The impact of this on the project resulted in the project time now being spread out over three school terms. This had implications for data gathering particularly with regard to the interviews conducted with the teaching staff. The earthquake, coupled with end of year assessments and

timetabling constraints narrowed the time available for interviews and questionnaires. People's focus had changed as a result of the earthquake and continuing sequence of aftershocks. The interviews had to be shortened and conducted in a very succinct manner with less time for general conversations around progress in the classroom that could have also provided insight into student progress.

The provision of a gifted programme centred on emotional intelligence was a new initiative for the school in which the project was located. As a result the parameters of the programme were limited physically to the school itself. This was also compounded by my role as both researcher and classroom teacher. I was required to operate within a close proximity to the school to allow for my movement between teaching and facilitating the project. An independent researcher conducting the project may have had the flexibility and advantage of establishing a project within the community the school was located within. This would have increased the exposure that the students experienced when dealing with outside agencies and member of the public. 'Empathy for others', a skill located within social leadership as discussed by Renzulli (2006), was not an area that the students appeared to extend further. If the project had taken place within a wider community setting, with an issue that severely impacted on people then the concept of empathy may have been developed further.

Summary

At the school where the project took place, the students attended an extension mathematics or language session across a term. The establishment of an enviro problem

solving group created the opportunity for the extension of those students identified by the school as displaying characteristics of emotional intelligence. When the group first came together it was as a segregated Year 7 and Year 8 student group. Over the progression of the project this changed to an amalgamated group as the participants learned to communicate through a common issue and the application of the Houndstooth model as a learning tool for this experience. Towards the final stages of the project, the group as a whole demonstrated an entirely different structure. Students were able to freely share their ideas with no fear of being ridiculed or told that their thoughts were not relevant. When there was a discussion about new ideas no one argued but instead followed suggestions of how to apply the new concept. The establishment of these skills of communicating and problem solving became consolidated. It is anticipated that each participant would be able to transfer these skills in the future into the community and future learning.

Each student participating in the project was able to demonstrate learning of significant new skills. The Houndstooth model enabled the participants to identify their movement through the problem solving process. There was recognition of particular skills that the participants were able to demonstrate such as active listening, leadership and satisfaction from helping others. Applying strategies that assisted in dealing with various problems meant less confusion about addressing community and global issues. Although the school community issue that was identified appeared over whelming initially, each person developed a strategy they could apply to assist with problem solving, encouraging feelings of positivity towards being a part of this process. The

participants were able to acknowledge that problems can be broken down into manageable parts. As a result of this experience each participant developed an understanding of their ability to become leaders and problem solvers. There was an increase in confidence both when working in the classroom and at home, resulting in increased feelings of positivity and optimism.

No way to describe it. It makes me feel special kind of because I was chosen and helped my skills in class. I have been better at doing organising and thinking of other ways of doing things

(A, Interview).

The next chapter is a discussion linking the literature connected to emotional intelligence to the themes that emerged from the research. The purpose of the discussion is to examine the research question against the success of the project.

Chapter Five: Discussion

This chapter involves a discussion that integrates the literature pertaining to emotional giftedness, the themes that emerged from the research and their relationship to the outcomes of the project. The purpose is to directly address the research question and ascertain the success of the incorporation of Renzulli's Houndstooth Project within an environmental primary programme to meet the learning needs of a group of emotionally gifted learners.

With the publication of the 2007 New Zealand School Curriculum, primary schools were given the unique opportunity to develop an individual curriculum that targeted the specific learning needs of their community. Within the development of individualised learning programmes, schools were able to allow for the incorporation of environmental education. Schools that have taken up the opportunity to become a part of the Enviro Schools partnership with their local councils (Enviro Schools Project, 2012), I believe have the two-fold advantage of both providing a learning vehicle for gifted students and extending their connections with the local community. Within the EnviroSchools project is the possibility of offering experience in problem solving and leadership particularly for those students who display the characteristics of emotional giftedness. The incorporation of Renzulli's 'Operation Houndstooth' with an environmental programme allows emotionally gifted students to identify co-cognitive features of their learning as they participate in a gifted learning programme.

Outcomes for gifted learners

Emotional

The project was primarily driven by an identified need to provide a learning experience for a group of emotionally gifted learners within a primary school setting that would meet their specific learning needs. As discussed in the Chapter 1 introduction to this thesis, recognition of emotional intelligence has developed on a more gradual path compared to that of academic intelligence (Versteynen, 2012). Unfortunately for some emotionally gifted learners, this has led to feelings of isolation and despondency about the world that surrounds them if their learning needs have not been met within their educational setting (Wedge, 2012).

Identifying and assessing those students in a school who display emotional giftedness requires assessment practices that move away from academic achievement and IQ forms of testing Silverman (2012). The selection of each participant of this project was based not solely upon academic achievement but also on teacher observations of the students as they interacted with their peers in the classroom. Within this setting each student had been observed demonstrating emotional characteristics such as those proposed by Clark (1992) and Silverman (1994), 'heightened self-awareness', sensitivity to the people around them, sometimes displaying a preference for working alone, displayed passion about social/global concerns and visibly intense feelings.

Some of the positive outcomes of the project for the participants that I observed as researcher and facilitator were that each week of the project the students would enter the

room bursting to share the ideas that they had been processing during the week. After the first couple of sessions there was no longer the feeling that this project was not achievable but a sense had developed that problems can be dealt with one step at a time. One of the students shared that he enjoyed that, 'People in this group get me'. This was a student, who if observed causally in class, would have appeared to be fully engaged in the classroom programme. Within the project he was able to connect and communicate with other students in a way that extended his thinking and problem solving skills.

The positive outcomes of the project follows as listed below:

- *Over-excitability*
- *Positive Psychology*
- *Co-operative Learning*
- *Leadership*
- *Social Capital*
- *Habits of Mind*

Over-excitability

As previously discussed, Kazimierz Dabrowski, the Polish psychologist and psychologist, had previously identified a sensitivity known as over excitability. People who are emotionally gifted may display an increased sensitivity and awareness of people and what is happening around them. When they become stressed by the conditions that exist around them, there is the possibility for depression to occur (Bainbridge, 2009). The participation of these students identified as emotionally gifted,

in a programme, in which over-excitability was able to be addressed, sought to hopefully limit opportunities for ‘existential depression’ to take form. The learning environment within the project was specifically developed to respond to the needs of this group of learners and attempted to dispel any intense emotions that could become the cause of over-excitability.

As the students on the project consolidated their understanding of the problem solving process and strategies, they were empowered to cope with their own feelings of anxiety or depression which may have existed in their response to the perceived issues around them. One of the students observed, she felt great that she, ‘Could do something for the future’.

It appeared that making a connection with other people with emotional intelligence broke down the feelings of isolation that the students had felt when faced with an issue. The students developed strategies which helped them break down an issue into something that was manageable to deal with. It appeared that dealing with problems or issues no longer seemed unattainable for each student, whether they occurred in the classroom or local community. Once the strategies and skills to approach a problem of concern had been established, they felt empowered to deal with anxiety or despair that could lead to over-excitability. As one student explained, ‘I feel fantastic; it means that I have been able to show my previous knowledge from problem solving for this group. I am dealing with different problems not just those from school’.

Positive Psychology

Another successful outcome illustrated in this research study was the establishment of individual positive outcomes for the students from their involvement in the project. Positive psychology, as introduced earlier in the study, focuses on encouraging positive outcomes for individuals in their day to day lives.

The students were able to feel a greater sense of positivity about different situations which allowed each individual to deal with various issues in the classroom. There was now an increase in confidence when taking part in other aspects of learning. One parent commented that her child now, ‘Demonstrated a better ability to look on the bright side for himself and others’. I feel that there exists here a clear connection between the student’s participation on the project and the increase in their feelings of positivity towards their learning outcomes, problem solving skills and interactions with other people.

In interviews and in their weekly journals, each student reported that they felt they had demonstrated an increase, not only in their unique problem solving skills but also in the confidence and optimism generated from their individual involvement in the programme.

It makes me feel special because I was chosen and it has helped my skills in class. I feel confident because I have been better at doing organising and thinking of other ways of doing things
(A, Journal).

The impact of their new experiences upon classroom learning both at school and home continued with classroom teachers and parents conveying that the students were interacting with greater confidence with adults around them.

B converses confidently with adults and has learned to work with different points of view. B is happy to contribute with other teachers
(Teacher, Interview).

C will often chat about the effects of events or how we are treating the environment and what she thinks the outcome will be
(Parent, Questionnaire).

The positive effects on the participants' experience in this programme had a wide application. The effects were observed not only in the classroom but also in the students' interactions with their peers and families.

Fredrickson (2011) suggests that emotionally gifted learners need to be placed within a learning environment that allows positivity to develop. As a result of participating in the programme students showed a new self-belief in their own ideas and in the difference that could be made by their contributions to solving a problem. Student B became more aware of his ability to deal with problems, 'I believe that I am able to solve problems with more ease than before.' This was in part due, to the new confidence that he felt he had, when working with new people outside of the school. This positivity also appeared to encourage an increase in independent thinking and responsibility. One of the

students, as observed by the classroom teacher, had moved away from relying on adult intervention which had impacted on her positivity towards others:

A has changed from expecting adults to sort things out and using negative comments to learning how to work with others. A can now socially organise herself and find solutions, her interactions are positive'

(Teacher, Interview).

Some of the students reported that after the completion of the project, they felt less frustrated by the problems and issues they were asked to deal with as they had learned to develop coping and linking strategies. One student commented, 'I am able to connect to larger global issues such as the Haiti earthquake and relief efforts over there'. Others noticed a decrease in their feelings from previously being highly frustrated, to only sometimes experiencing frustration with the issues they observed in the news and around them. Student C reported in his interview, 'I can now feel a connection to the volcano erupting in Iceland and the people who were stranded in the airports'. All of the students reported feeling less confusion about issues on a global and national scale.

I now have a strategy for solving a community problem. I can talk to some of the locals about the problem and find out their opinions. I could even talk to the City Council

(B, Journal).

Cooperative Learning

Matthews (1992) identified that the efficient development of problem solving skills for students displaying emotional intelligence includes creating opportunities for working cooperatively to share ideas. As discussed in the literature review, this is important when it comes to motivating and providing learning environments that meet individual learning needs (VanTassel-Baska, Landrum & Petersen, 1992). As was evident in the findings, cooperation began to emerge between students in different year groups despite initial hesitation.

I can answer more questions and I feel that I am participating more
(E, Journal).

The students found that their confidence had increased when it came to giving opinions both within the group and in their own class.

I have increased participation when solving problems in the classroom. Now I
felt that I have skills that other people might not have so I can lead a group
better
(C, Interview).

By the end of the project, four of the students indicated on their learning continuum that they were more involved in helping to solve problems, while the other students had consistently maintained current levels.

Each week the students were able to demonstrate an improvement in their problem solving ability. Some of this, I believe from my observations, was the direct result of the connections and discussions held by the students pertaining to their approach to solving the community problem. There appeared to be a transferring of their newly established skills to help solve other problems in the classroom. The students themselves were able to comment on their increased ability in the group sessions to discuss logical outcomes to problems, 'I feel the ability now exists to think through and solve problems'. Both classroom teachers noticed that some of the students had learned to work with different points of view and could share this with the teacher, 'C has been keen to be helpful in problem solving, demonstrating potential within small groups'.

One student commented at the end of the project, 'I do feel that I have efficient skills to assist with problem solving because I can think flexibly when I am in a good learning environment.' This comment helps to add weight to the argument for the continued establishment of problem solving programmes that also include an element of cooperative learning. This student was able to recognise that the learning environment she is placed within plays an important role in her ability to develop her thinking. By supporting these learners by their placement in a programme that encouraged the development of cooperative ideas and sharing, each participant as discussed was able to extend their skills not just in the programme but in their classroom learning as well.

Co-cognitive skills

The composition of this gifted programme was not only based upon providing evidence for educators to respond appropriately to the learning needs of emotionally gifted learners but also to attest to the success of incorporating Joseph Renzulli's gifted learning model 'Operation Houndstooth' within environmental education. Within this gifted model are factors that strive to 'enhance' individual cognitive processing skills. These components which further extend gifted learning were developed by Renzulli as: optimism, courage, romance, sensitivity, physical energy and vision (Renzulli, Koehler, & Fogarty, 2006).

The instigation of these co-cognitive components within the project made it possible for the students to make sense of their learning progress and the connections that they were experiencing with the people around them. The components founded the discussion that was a feature of the group as they came together each week to identify their progress in the programme.

Week 7 Sensitivity to Human Concerns: We are listening to people's concerns about the gardens. We are learning to listen to all ideas not just our own (Group Discussion, Observation).

Under the six co-cognitive components of the 'Houndstooth Model' the students as a group were providing evidence of their affinity to these co-cognitive skills.

Optimism: we are building a sense of vision past the first year of the project.

Courage: this is our ability to face and deal with challenging situations like

conducting interviews with adults about the outdoor environmental space we are responsible for developing.

Romance with a topic or discipline: this is the way we feel about the importance of preserving and caring for the environment.

Sensitivity to human concerns: is our ability to work with and talk to other people involved with our work.

Physical / Mental energy: is the energy we are putting in to the development of the project.

Vision / Sense of destiny: is our willingness to oversee a project that may not be completed while we are at school

(Group Discussion, Observation).

The successful implementation of these co-cognitive skills I would contend, as evidenced by myself as the researcher and facilitator, allowed each student to gain greater perspective into their ability to connect with the world around them and the possibilities that were now open to them as individuals who possessed the ability to conduct and manage problem solving and leadership.

Leadership

The broadening of the co-cognitive skills of this group of gifted learners provided strategies that enabled these students to develop as problem solvers and leaders by recognising and developing their own skills and aptitude. “Once a school is able to establish an environment that fosters social action projects, students will begin to

recognize that they are capable of being agents of societal change” (Renzulli, 2006, p.22).

This group of learners were provided with a learning framework that modelled specific skills that could be accessed for different types of problem solving. As one student affirmed,

I was doing a problem solving question about what can we do with all this junk? Now I would probably be able to answer it because I had learned what to do in the group
(C, Journal).

Another student identified that she is, ‘Able to make connections to a problem solving plan if faced with a community issue’.

Classroom teachers, parents and the school principal all observed an increase in the energy levels of the students when involved in problem solving whether in classroom environment or at home. Both classroom teachers commented on the ‘increase in organisational skills displayed by the students while they were operating in the classroom. At school the principal noted that, ‘The participants have increased the sense of power that they have in their ability to participate in changing things’. Each student could now name the strategies that they would individually employ to solve problems outside in the community.

If faced with a problem I would now make a list of solutions and choose the best one to solve it. If faced with a community problem I would find others in the community who have the same concerns and contact the City Council (E, Journal).

Four of the students indicated that after participating on the project that they would feel comfortable assuming leadership roles compared to how they felt about accepting leadership roles at the commencement of the project. I would argue that these students with their emotional abilities always had the potential to become leaders but needed scaffolding into those roles through engagement in a gifted programme that met their specific learning needs.

Social Capital

The development of students who are not only capable problem solvers but potential leaders has implications for aspects of their schooling and the social community as well. Throughout the project, the students would compare the problem solving process that they were involved in, to that of a city council planner. As one student stated, 'Anything that involves problem solving means you have to consult and you have requirements'. When developing 'Operation Houndstooth' Renzulli, (2012) suggested implications for the emergence of leaders whose abilities would be an asset to society especially in regard to the concept of encouraging social capital as well as financial capital.

Through their own involvement with the project, it was clear that the students were developing a vision to help others in their local communities. For example, during the group discussions, each student would take a turn at discussing the effects of an event or action if they were to implement it into their plan. This would sometimes lead to a discussion about the impact of a national or global issue on communities or the New Zealand environment such as the amount of pollutants that were allowed to contaminate rivers like the Waikato River. It is hoped that the students will be able to project the acquisition of their problem solving skills through into their time at high school and beyond. The students were able to recognise and comment on the similarity of the roles that they have undertaken to that of a council planner, developer or a landscape architect, 'You are looking at a bigger picture than other people'. As the researcher I observed that there was a sense of recognising the problem solving skills and leadership opportunities that might present themselves in the future at high school and among their peers.

Habits of Mind

As a thinking tool, the 'Habits of Mind' model was already entrenched in the school as part of a school wide thinking skills programme. This programme assisted with the development of the problem solving skills. As indicated in the literature review, Costa's 'Habits of Mind' supported the students by extending their problem solving skills particularly in the area of higher order thinking. During the project some of the students made references to accessing their 'Habits of Mind' and used this to explain the strategies they implemented during the project. Within the project, 'Habits of Mind'

encouraged the development of self-esteem and organisation pertaining to self-management.

From the tools of 'Habits of Mind' there was a connection made by most of the students in regard to 'engaging with past knowledge and applying it to present situations when facing a problem at school'. One student commented that she was now able to solve harder problems with this active engagement of her problem solving skills and utilising 'Habits of Mind'.

'Operation Houndstooth' and environmental education

Environmental education, I would argue, is an ideal vehicle for the development of gifted programmes particularly those seeking to address the needs of emotional intelligence. Within an Enviro Schools programme, students can make connections at a primary school level to environmental concerns and establish systems of sustainability that can be linked to a global perspective. Opportunities to develop 'school-related' gifted programmes through environmental education, advocates for the participants in these programmes to apply and use their own abilities as suggested by Renzulli, Koehler & Fogarty, (2006). Students involved in the project were able to develop their self-belief in their ability to address local environmental concerns with myself as the facilitator providing some guidance.

The development of a gifted environmental programme provided the participants with opportunities for further development of their awareness of environmental issues in the

local community and involvement in solving an environmental concern for the local school community. Involvement in an environmental project drew the students together in an area of learning that became relevant to them because it was linked to a topic that they were passionate about. With the application of their problem solving skills, the students were guided by the ‘environmental values’ of the school community which was important as they learned to consider the opinions of others and the consultation process (Gourlay, 2011).

‘The progression of individuals through the levels of the Houndstooth Intervention mirrors the progression through Kohlberg’s stages of moral development’ (Renzulli, 2006). This statement serves to reinforce the applicability of the Houndstooth model as a relevant learning framework for emotionally gifted students. As examined earlier in this chapter, by making connections to the co-cognitive components of ‘Operation Houndstooth’, these students actively sought to develop their comprehension of their expressed interest in the people and issues present around them. The Houndstooth components assisted the students with their ‘moral reasoning’ for selecting the solutions that had the least negative impact on people and the environment but positive outcomes for the future. The introduction of the co-cognitive components of the Houndstooth model provided these learners with a further extension of their cognitive ‘attributes’ such as organisation and motivational skills (Renzulli, 2006).

The active engagement of the students within the Houndstooth Model also allowed them to recognise and extend upon their passion for the environment. This passion assisted

the students with their motivation when determining a viable solution to the community environmental issue about an outdoor educational area that had become a storage space.

I believe, as the researcher and facilitator of the project, that amalgamating Renzulli's Houndstooth model within the New Zealand Enviro Schools project has clear benefits for students who display emotional gifted characteristics. I was able to observe a group of students who started operating on the project as a segregated group with split ideas on how to address this issue, evolve into a tightly banded group of thinkers who logically discussed the application of new ideas and materials. Each person was able to confidently relay their thoughts and concerns.

Week 3 of the project and the social dynamics of the group has changed from being slightly reserved to a functioning group
(Researcher, Journal).

Although the issue that has been identified appeared over whelming initially the students have broken down the problem into manageable parts
(Researcher, Journal).

From the earlier discussions the students were able to identify their skills that were linked and involved the co-cognitive components of optimism, courage and romance with a discipline. The students did not appear to have difficulty combining their knowledge of the environment together with the co-cognitive features of the Houndstooth model.

Summary

The development of an emotionally gifted programme constructed around an environmental programme and Joseph Renzulli's gifted framework 'Operation Houndstooth' presented students with the responsibility for effecting environmental change to a public area in the school to address a specified school community problem. Active engagement in the project offered a group of emotionally gifted students with the opportunity to conduct research, consult with their local school community, examine the impact of proposed solutions on people and deal with various forms of information and people.

The process had several positive outcomes. As a result of their participation the students were able to identify that involvement in the project consolidated their use of problem solving skills used with social and community issues. Their involvement also led to the development of their confidence in dealing with these types of issues in school and the positivity they now felt if faced with problems on a personal level or with national and global issues. The changes in the energy levels of the students and increased contributions to problem solving and classroom organisation were observed by the teachers associated with the project. Their new learning and their developed ability to connect with people also has the potential to continue to mature in their high school learning.

Within the home environment, parents and caregivers commented on the increase or new types of discussions connected to the problem solving process and wider school

environmental issues that took place. The connections extended further as the students demonstrated their ability to discuss their perceptions of community and global issues. Several students commented that they now found themselves reflecting on how to solve problems that they noticed outside in the local community.

I would again argue that the success in utilising an environmental programme to meet the learning needs of a group of emotionally gifted students is directly related to the incorporation of Renzulli's 'Operation Houndstooth'. Within this model the students identified with the co-cognitive components that allowed them to articulate their connections to the learning, so expanding their ability to become efficient problem solvers. The 'internalisation of the co-cognitive factors' was evidenced through the discussions with the students as they discussed and identified with each component of this gifted learning model.

Chapter Six: Conclusion

This study has shown, with evidence from current research and literature, that within a New Zealand educational setting, Joseph Renzulli's gifted learning framework, 'Operation Houndstooth', can be successfully incorporated with an environmental programme. Results of this study show that such an amalgamation can successfully meet the co-cognitive learning needs of a group of gifted learners who display the characteristics of emotional intelligence. These characteristics if nurtured, as suggested by Renzulli, will have an impact upon the development of social capital in our communities (Renzulli, 2002).

The publication of a revised New Zealand National Curriculum in 2007, provided New Zealand schools with the opportunity to construct programmes, such as that tested in this research study, that had the potential to involve and take account of the unique make up of their own learning communities and their physical environments.

Implications of this study

Project

At the end of the ten week project, utilising their problem solving skills, the students had accomplished the following: planning meetings held with the principal, deputy principal and caretaker to organise the direction of the project into the next year, tasks and roles organised for school-wide Enviro group to assist in the construction of the garden area, designs created for garden area with assistance from a landscape architect, a school-wide survey conducted and analysed for feedback on the design and layout of

the communal space. Research was undertaken on construction materials and plants, unwanted playground equipment and items were sold, and all rubbish removed from the area. At the end of the study the students were ready to move onto the next phase of the design process which would follow on in 2011.

Participants

Any assumption that the students would immediately bond and connect with each other due to their emotional intelligence was dispelled in the first session when there was the immediate Year 7 and 8 spilt in the group. Interpersonal communication skills had to be developed so that the students could discuss and identify their strengths for the project. Once this had been achieved, the students' new learning was evident as they appeared to almost anticipate each other's thoughts and easily linked their ideas with other's especially when discussing implications of decisions and the direction of their problem solving. I observed a freedom of speech and expression throughout the project between all the students and this in turn applied to the range of ideas that were communicated as a group to the rest of the school community. This group of emotionally gifted students had been given, I believe, a voice that enabled them to communicate more freely with their peer group and the adults around them. As the project progressed and their confidence grew, each person became stronger in the conviction of their ideas and wanted to have them heard by others.

Time limitations

I felt time constraints caused by the initial Christchurch earthquake restricted student access to dialogue with experts and their ability to develop their work into a larger project. I would have liked to have brought in experts to explore further and expand the different areas of interest expressed by the students. Unfortunately, towards the end of the project the landscape architect working with the project was required to assist with engineering assessments related to the earthquake. Two of the students were particularly interested in bringing their concerns about the forms of pollution that they had observed in a Christchurch river that was located close to the school to the notice of their local community and City Council. This was unable to be developed further due to the impact of overflow from the drainage system as a result of the earthquake.

As mentioned previously, it became harder to access people for interviews and informal discussions due to the busyness that took over after the earthquake. People were distracted and did not have the same amount of time to set aside for lengthy interviews. Even the timetable of the school became tighter due to loss of schooling time caused by school closures as a result of the earthquake. The students themselves continued to be focused on the project and applied themselves to the completion of their ideas in the time that was left to them.

Future of the project

Despite the project drawing to an end in November 2010 and the Year 8 students completing their time at the school, this enviro extension programme was again

reinstated for 2011 and 2012. The Year 7 students who were now Year 8 students were enthusiastic about applying themselves to the next stage of the planning. With the programme in 2010 meeting expectations, the school provided release time and funding for the project to continue for a second year. Unfortunately Christchurch experienced a devastating earthquake in February, 2011. The school itself was located less than 10 kilometres from the movement in Lyttelton and suffered considerable damage. One of the buildings and land areas that the school lost was the area that was the focus of this project and the building that was attached to it. The building itself was demolished and the land area zoned to restricted access. Everything that the students had achieved was taken back to the beginning of the project as it was in 2010 but the group of Year 8 participants from the previous year demonstrated great resilience. Along with the new group of Year 7 students, they used the time that they had available while waiting on the outcome of the land assessment, to research building materials and plants that would be adapted and suit the new land configuration. The principal met with the group to discuss plans for the land area and the students revised their plans to accommodate the concepts for the new space. At the end of the year the students met with the new group of students who would continue with the project into 2012. Despite the setback to all of their work the students appeared to display optimism and a strong vision of the future for the project.

Significance of the study

Programmes of learning

The findings from this project indicate that incorporating Renzulli's Houndstooth Model within an environmental programme provides New Zealand primary schools with viable means to meet the learning needs of those students who display the characteristics of emotional intelligence. The provision of a community problem solving component allowed for the acquisition of skills that demonstrated the growth of each student as problem solvers and their self-belief in the role that these skills had to play in their classrooms, school and wider community.

What was highlighted by the participants was the optimism, vision and romance with a discipline that they identified with from the Houndstooth Model. Even though the students knew it was a long term project, there was a sense of optimism about their participation. There was a feeling of excitement as they realized that their efforts through the project were leading to positive outcomes for the school community.

Recommendations

Schools

If we are attempting to meet the learning needs of all the students in our classrooms then I believe that schools need to seek opportunities that will allow for greater teacher education in recognizing and providing programmes that encourage the growth of all gifted students but in particular those with emotional intelligence. This would also instigate and allow for clearer communication between teachers and the families of

gifted students. Teachers may sometimes lack the confidence to deal with gifted students and their parents but a greater depth of knowledge can take the 'mystery' away and provide deeper learning opportunities for these students. The benefits will apply to both the future education success of the participants and to their community as the learning supports the development of future leaders;

‘By employing this intervention, schools will encourage a new generation of students to use their gifts in socially constructive ways and seek ways to improve the lives of others...

Renzulli, Koehler, & Fogarty (2006).

This project was established at the Year 7 and 8 level within a primary school setting but I would recommend that it could be adapted and run in the middle area of a school to encourage the development of potential school leaders who would emerge from within the programme. A second outcome would be the strengthening of environmental programmes within individual schools and the development of community networks as the students develop the interest to take their problem solving skills from within their school environment to their local communities.

Participants & empathy

From the findings it emerged that the students did not demonstrate as great a shift in their empathy/sensitivity for others as would have been predicted at the commencement of the project. A consideration for further work would be a lead in programme that first works with the students developing their understanding and connection to empathy for

others. This would assist in consolidating their awareness and sensitivity to others not just in their school environment but the local community and further afield.

My learning journey

I believe, like other New Zealand teachers, I began this journey with a limited knowledge of those gifted students who sat in my class but whose learning needs I would sometimes struggle to comprehend. After completing a paper on gifted education led by Jenny Smith at Canterbury University I experienced my 'aha' moment when I found myself drawn to the area of gifted education and the relevance of my teaching on the learning experiences of this group of learners and their families. I found myself particularly drawn to those students who displayed emotional intelligence and wanted to know more about the way in which I could embrace their style of learning. After being involved with the Enviro Schools project, I identified that environmental education could offer an applicable option to meet the needs of emotional intelligence. It was while I was investigating my thesis topic that I was introduced to Renzulli's 'Operation Houndstooth'. This was my second 'aha' moment as the more I read and researched of this gifted model the more I became convinced that I had found the framework and vehicle to offer a gifted extension programme to meet the needs of emotionally gifted students. From here, I began the preparations to develop my research project based on meeting the needs of emotionally gifted learners. As I began the project with this group of students I was particularly struck by their eagerness and their relief at being able to experience working with a group of students who were able to make similar connections to the problems and learning material placed before them. This has, as an educator,

inspired me in my teaching to always continue to develop and enhance programmes that meet the learning needs of all students who sit before me in a classroom.

Suggestions for future research

Due to the constraints on teaching in the school where the research was based, the project was unable to be transferred into the local community. I would recommend that a future project be placed within the confines of the local community outside of the school, to examine the impact of the programme for emotionally gifted students within this setting.

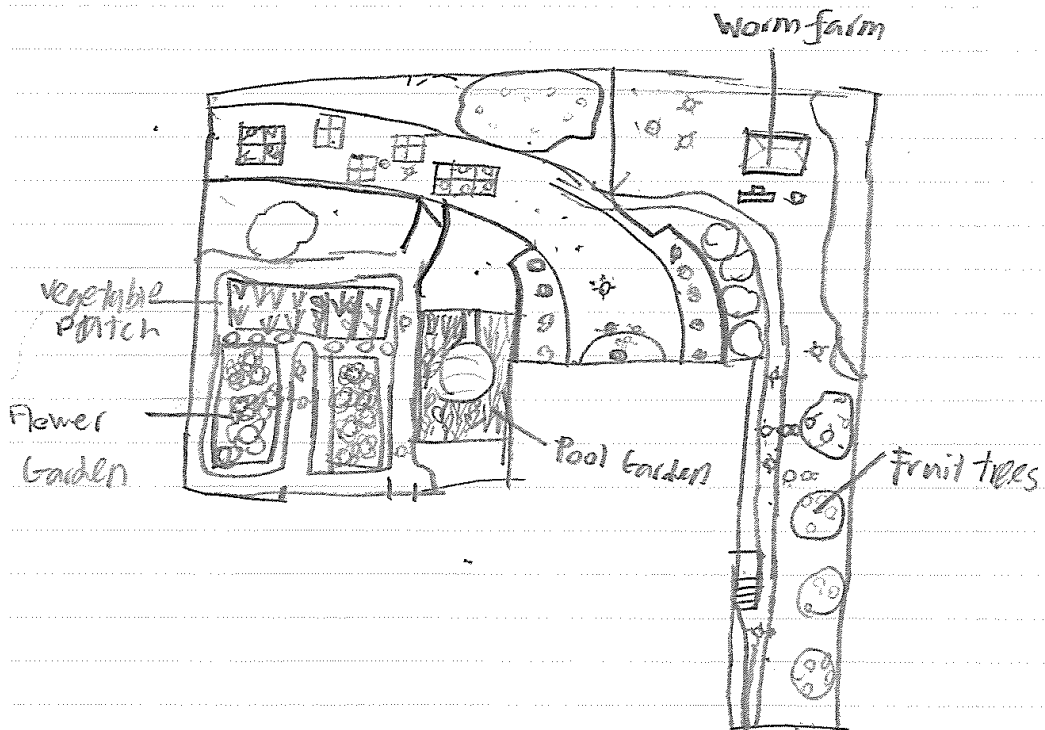
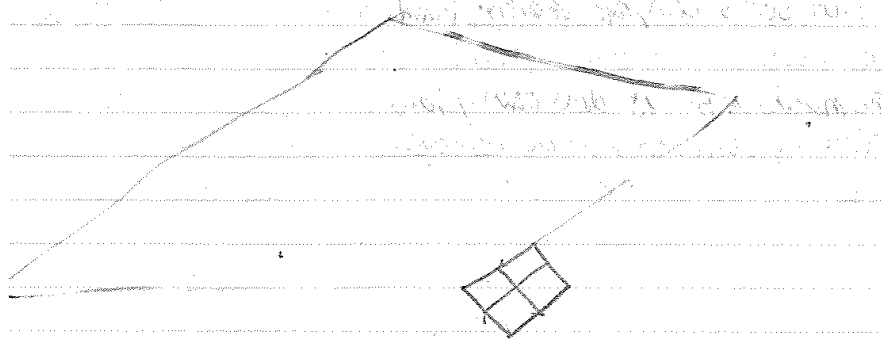
An opportunity for future research would be to run the programme between two different schools to monitor the outcomes of the projects and the response of the participants. Do the students fully engage with the Houndstooth model at the different schools? Is there a noticeable shift in problem solving skills, leadership and confidence levels as evidenced by the initial project? This is an area of research that I suggest could be explored further. Does the setting of a project impact upon the learning outcomes for the participants? This is a topic that could be further developed.

My recommendation for a long term project would be the tracking of the problem solving skills and feelings of optimism of the Year 8 students as they transfer from the programme and their journey as secondary students. A further extension would be to establish the development of social capital by the students as they utilised their skills and strategies established in the project as adults. I would like to examine and question

how the students as adults related to this experience and the impacts upon their long term learning and relationships.

This study began with the concept of developing a programme of learning that would enhance the learning experiences of a group of emotionally gifted students. As final outcomes it is hoped that educators will firstly recognise emotional intelligence as an important form of giftedness and seek to implement programmes that extend the skills of these learners. Secondly, that educators will be encouraged to examine both Renzulli's 'Operation Houndstooth' and the New Zealand Enviro Schools project as very accessible and viable frameworks for the application of gifted programmes.

My Vision



Appendix B

Weeding



Flowerbeds

Area on Right side of the path it also needs replanting

Leaf sweeping on most of the concrete

Unused, unlocked door can it be fixed and used?

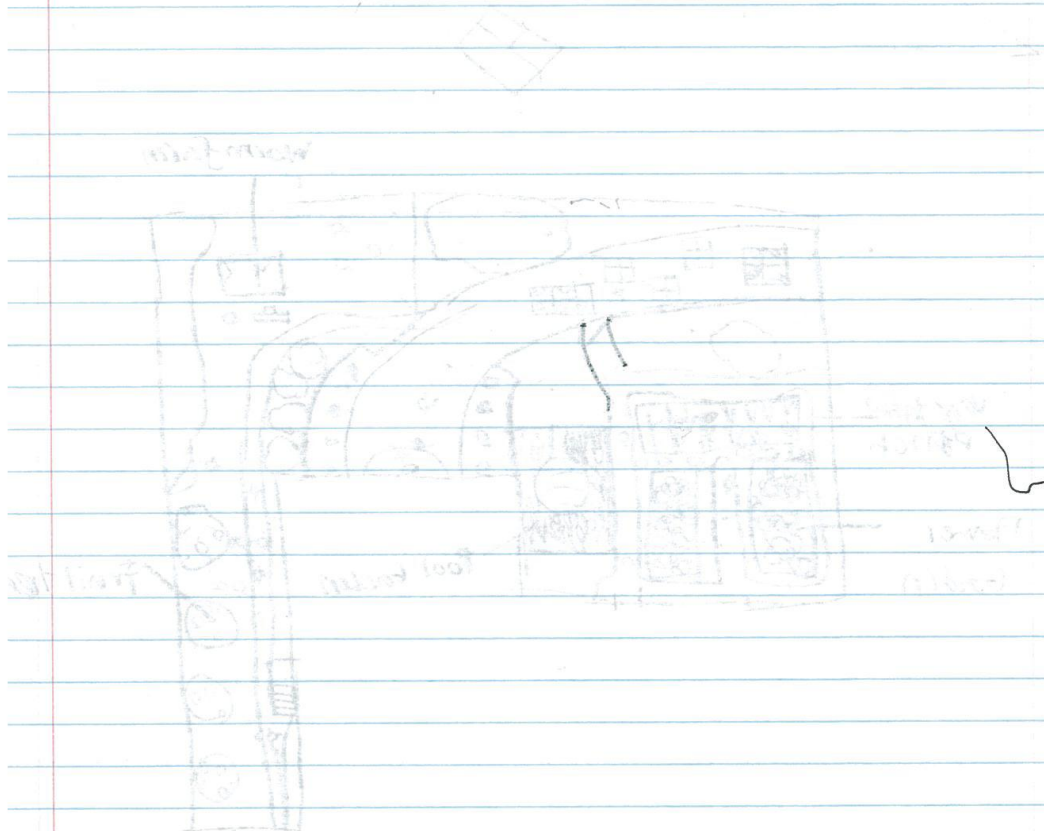
3/4 hot seats can be possibly used

Location: Near
Old Gym equipment

a bit of weeding on all other areas

concrete needs a bit of deweeding too.

little fence by driveway to be removed



Appendix C

TASK SHEET #6

Surfacing (including gravel)

1. Please write a paragraph on why you like gravel?
2. Can you think of 5 other materials that can be used for a path?

Please draw a sketch or cut out and stick an image that you find inspiring about your topic



Why does the school want paths?

People enjoy walking on gravel paths

Why do you like gravel?

I don't like gravel but I do enjoy Pavers because they are ~~smo~~ smooth and don't hurt your feet when you walk on them in bare feet



- * Pavers
- * river rock
- * Pebbles
- * bark
- * .

Appendix D

TASK SHEET #1

Edible plants: Strawberries and Grapes

1. Please write a paragraph on how to grow strawberries
2. Please write a paragraph on how to grow grapes
3. List 3 different types of Strawberries
4. List 3 different types of Grapes
5. Fill in the table below

	Do they like Sun?	Do they like Shade?	Size	
			Height	Width
Strawberries	Yes.	No	6 inches	18 inches
Grapes	Yes	No	?	?

Strawberries

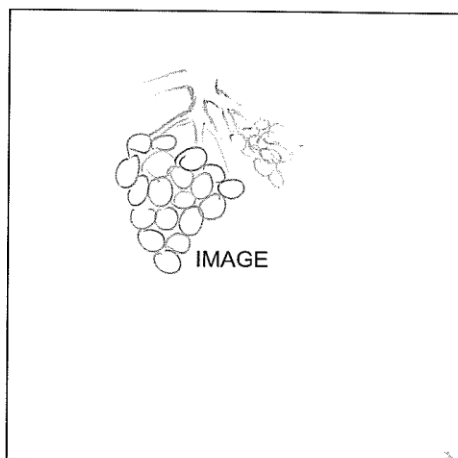
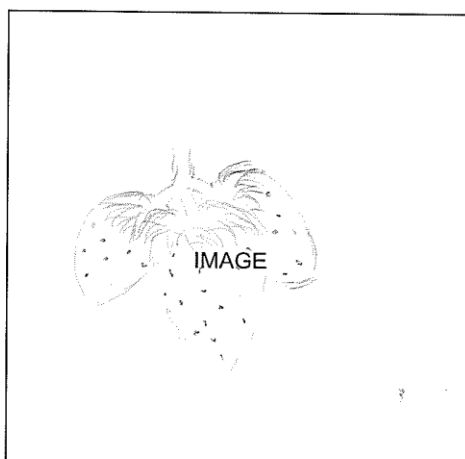
1. Choose a site with excellent drainage, gets full sun, warms up early in spring.
2. Till the planting bed thoroughly to a depth of at least 12 inches, put in lots of compost.
3. Set plants 18 inches apart, in rows 3 to 4 feet apart.

Grapes

1. Choose site with good drainage, light fertile soil. Yearly apply lime and general garden fertile.
2. Plant off pergola frame, or a simple wire trellis, or fence. Shelter from strong winds. If more than 1 vine, place 2m apart.

3. Keep away from birds

Please draw a sketch or cut out and stick an image that you find inspiring about your topic



References

- Alasuutari, P., Bickman, L., & Brannen, J. (2008). *The SAGE handbook of social research methods*. London: SAGE Publications.
- Ansell-Shepherd, L. & Shepherd, C. (2001). *Am I gifted?* Retrieved from www.gcabc.ca.
- Bainbridge, C. (2009). *Social and emotional problems affecting gifted children*. Retrieved from www.giftedkids.about.com.
- Baum, S., Reis, S. & Maxfield, L. (1998). (Eds.). *Nurturing the gifts and talents of primary grade students*. Mansfield Center, CT: Creative Learning Press.
- Berkwits, N & Inui, T. (1998). Making use of qualitative research techniques. *Journal of General Internal Medicine*, 13 (3), 195-199.
- Clark, B. (2002). *Growing up gifted: Developing the potential of children at home and at school*. (6th ed.). Ohio: Merrill Prentice Hall.
- Clark, B. (1992). *Growing up gifted: Developing the potential of children at home and at school*. (4th ed.). New York: Macmillan.
- Costa, A & Kallick, B. (2000). *Describing 16 habits of mind*. Retrieved from www.instituteforhabitsofmind.com.
- Cotts, R. & Ozga, J. (2005). What is Social Capital and How Might It be Used in Scotland's Schools? 36 December.
- Davidson, C. & Tolich, M. (2003). *Social science research in New Zealand*. Auckland: Pearson Education.

Enviroschools. (2009). *The Enviroschools Foundation*. Retrieved from www.enviroschools.org.nz. Hamilton.

Education Review Office. (2010). Working with the National Standards with New Zealand Curriculum. *National Standards*. Retrieved from www.ero.govt.nz.

Felder, R. & Brent, R. (2007). Cooperative Learning. In Mabrouk, P.A. (Ed.), *Active Learning: Models from the Analytical Sciences*. Washington, DC: American Chemical Society.

Feldman, D., Csikszentmihalyi, M. & Gardner, H. (1994). *Changing the world: A framework for the study of creativity*. CT: Praeger Publishers.

Feiring, C., Lewis, M. & McGufflog, C. (1987). The diverse profile of the extremely gifted child. *Roeper Review*, 10 (2).

Gagne, F. (2000). *A differentiated model of giftedness and talent*. Retrieved from www.curriculumsupport.education.nsw.gov.au.

Gagne, R.M. (1985). *The conditions of learning and theory of instruction*. (4th ed.). New York: Holt, Rinehart & Winston.

Gagne, R. (1984). Learning outcomes and their effects: Useful categories of human performance. *American Psychologist*, 39 (4), 377-385.

Galbraith, R.E. & Jones, T.M. (1976). *Moral reasoning – A teaching handbook adapting Kohlberg to the classroom*. Mpls: Greenhaven Press Inc.

Gauntlett, D. (2011). *Making is connecting: The social meaning of creativity, from DIY and knitting to You Tube and Web 2.0*. UK: Polity Press.

Goleman, D. (2001). Emotional intelligence: Issues in paradigm building. In Cherniss, C. & Goleman, D. (Eds.). *The Emotionally Intelligent Workplace*. San Francisco: Jossey-Bass.

Gourlay, B. (2011). Lessons from the land. *Principals Today*, 91.

Green, J., Camilli, G. & Elmore, P. (2006). *Handbook of complementary methods in education research*. Washington D.C.: Lawrence Erlbaum Associates, Inc.

Hitchcock, G. & Hughes, D. (1995). *Research and the teacher – A qualitative introduction to school-based research*. (2nd ed.). London: Routledge.

International Centre of Educators' Learning Style. Retrieved from www.icels-educators-for-learning.ca.

Klein, P. (1997). Multiplying the problems of intelligence by eight: A critique of Garner's theory. *Canadian Journal of Education*, 22 (4), 377-394.

Kuhlthau, C. & Maniotes, L. (2007). *Guided inquiry learning in the 21st century*. CJ: Libraries Unlimited, Inc.

LaBonte, R. (1999). Social capital and community development: Practitioner emptor. *Australian and New Zealand Journal of Public Health*, 23 (4), 430-433.

Larsen, R.W. (2000). Toward a psychology of positive youth development. *American Psychologist*, 15 (1), 170-183.

Lind, S. (2001). Over-excitability and the gifted. *Supporting Emotional Needs of the Gifted*. SENG Newsletter 1 (1), 3-6.

Lowhorn, G. (2007). *Qualitative and quantitative research: How to choose the best design*. Academic Business World Conference 2007. Retrieved from www.abwic.org

Lyons, P. (2009). Quiveringly alive. *Tall Poppies* 34 (2).

- Ma, C. (1998). Emotional intelligence and creativity of their gifted children. *Spring Conference*. Centre for Talent Development. Illinois: Northwestern University.
- Masten, A. & Yates, T. (2004). Fostering the future: Resilience theory and the practice of positive psychology. In Linley, P. & Joseph, S. (Eds.). *Positive Psychology in Practice*. United States: John Wiley & Sons.
- Matthews, M. (1992). Gifted students talk about cooperative learning. *Educational Leadership*, 50 (2), 48-50.
- McBride, R. & Schostak, J. (2005). *Action research. Qualitative research, research based education and enquiry*. Manchester Metropolitan University, Institute of Education.
- Mills, G. (2007). *Action research - A guide for the teacher researcher*. (3rd ed.). New Jersey: Pearson Education, Inc.
- Ministry of Education. (2012). Gifted and Talented Students Meeting Their Needs in New Zealand Schools. Wellington: *Learning Media Limited*.
- Ministry of Education. (2012). The National Curriculum. *New Zealand Education*. Retrieved from www.minedu.govt.nz.
- Ministry of Education. (2010). *Teaching as inquiry and the key competencies. Key competencies*. Retrieved from <http://keycompetencies.tki.org.nz>.
- Ministry of Education. (2007). *The New Zealand curriculum*. Wellington: Learning Media.
- Mutch, C. (2005). *Doing educational research: A practitioner's guide to getting started*. Wellington: NZCER Press.

- Nucci, L. (2009). *Nice is not enough: Facilitating moral development*. New Jersey: Pearson Education.
- O'Brien, R. (1998). *An overview of the methodological approach of action research*. University of Toronto: Faculty of Information Studies.
- Olszewski-Kubilius, P. (1999). A critique of Renzulli's Theory into Practice models for gifted learners. *Journal for the Education of the Gifted*, 23 (1), 55-66.
- Parke, B. (1992). Challenging gifted students in the regular classroom. *Gifted Education Digests, December*. Patton,
- M. & Cochran, M. (2002). *A guide to using qualitative research methodology*. California: Sage Publications.
- Patton, M. (2001). *Qualitative research and evaluation methods*. (3rd ed.). California: Sage Publications.
- Piechowski, M. (2003). Emotional and spiritual giftedness. In Colangel, N. & Davis, G. A. (Eds.), *Handbook of Gifted Education* (3rd ed.). New Jersey: Pearson Education.
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology* 24, 1-24.
- Putnam, R. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton: Princeton University Press.
- Reis, S. & Renzulli, J. (2003). The school wide enrichment model: Developing creative and productive giftedness. In Colangel, N. & Davis, G. A. (Eds.), *Handbook of Gifted Education* 3rd ed.). New Jersey: Pearson Education.
- Reis, S. & Renzulli, J. (1997). *The schoolwide Enrichment Model: A how to guide for educational excellence*. (2nd ed.). Conn: Creative Learning Press.

- Reis, S. & Renzulli, J. (1985). *The schoolwide enrichment model: A comprehensive plan for educational excellence*. Creative Learning Press: Conn.
- Renzulli, J., Koehler, J. & Fogarty, E. (2006). Operation Houndstooth intervention theory: Social capital in today's school. *Gifted Child Today*, 29 (1), 14-24.
- Renzulli, J. (2012). Re-examining the role of gifted education and talent development for the 21st century: A four-part theoretical approach. *Gifted Child Quarterly*, 56 (3), 150-159.
- Renzulli, J. (2002). Expanding the conception of giftedness to include co-cognitive traits and to promote social capital. *Phi Delta Kappan*, 84 (1), 33-58.
- Renzulli, J. (2003). Conception of giftedness and its relationship to the development of social capital. In Colangel, N. & Davis, G. A. (Eds.), *Handbook of Gifted Education* (3rd ed.). New Jersey: Pearson Education.
- Renzulli, J. (1978). What makes giftedness? Re-examining a definition. *Phi Delta Kappan*, 60, 180-184.
- Salovey, P. & Mayer, J. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9 (3), 185-211.
- Silverman, L. (2012). Assessment of gifted children. *Malone Family Foundation*. Retrieved from www.malonefamilyfoundation.com.
- Silverman, L. (2012). What we have learned about gifted children. *Gifted Development Centre*. www.gifteddevelopment.com.
- Silverman, LK. (1994). The moral sensitivity of gifted children and the evolution of society. *Roeper Review*, 17 (2), 110-116.

- Seligman, M. & Csikszentmihalyi, M. (2000). Positive psychology. *American Psychologist*, 55 (1), 5-14.
- Seligman, M. (2000). *The science of optimism & hope. Research essays in honour of Martin E. P. Seligman*. PA: Templeton Press.
- Seligman, M. (1991). *Learned optimism*. Sydney: Alfred A. Knopf, Inc.
- United States Department of Education. (1998). *Tools for schools*. United States of America. www.ed.gov.
- Slavin, R. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary Educational Psychology*, 21. 43-69
- Smith, M.K. (2002, 2008). Howard Gardner and Multiple Intelligences. *The Encyclopaedia of Informal Education*. Retrieved from <http://www.infed.org/mobi/howard-gardner-multiple-intelligences-and-education>.
- Tellis, W. (1997). Application of a case study methodology. *The Qualitative Report* 3 (3).
- Turiel, E. (2002). *The culture of morality*. Cambridge: Cambridge University Press:
- Extension Centre for Community Vitality. (2008). *Social capital and our community*. University of Minnesota. Retrieved from www.extension.umn.
- VanTassel-Baska, J, Landrum, M & Petersen, K. (1992). Cooperative learning and gifted students. *Journal of Behavioural Education*, 2 (4). 405-414.
- Versteynon, L. (2012). Issues in the social and emotional adjustment of gifted children: What does the literature say? *Journal of Gifted Education*, 13 (1).
- Wedge, M. (2012). The drama of the gifted child. *Psychology Today*, June.

